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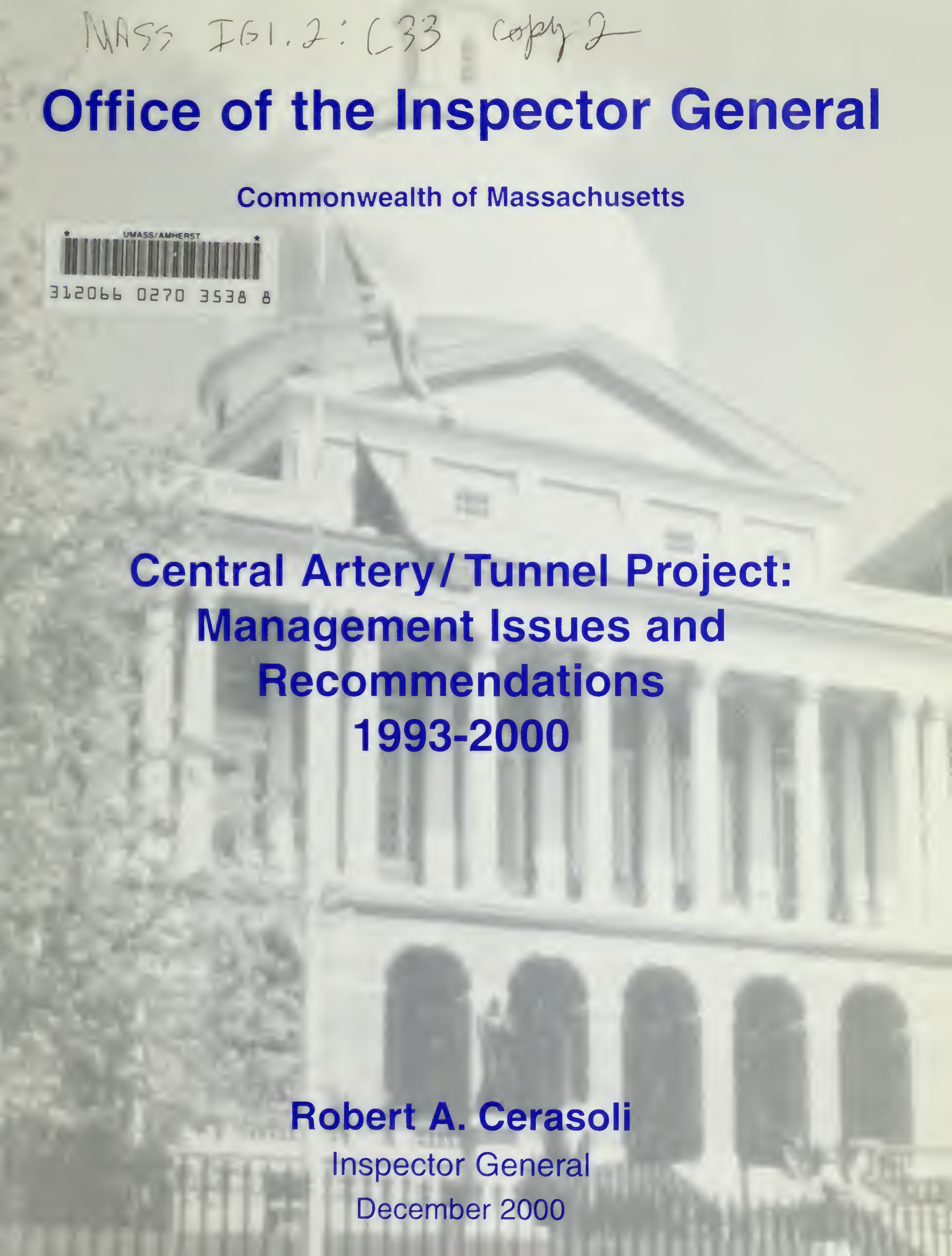

Office of the Inspector General

Commonwealth of Massachusetts

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Central Artery/Tunnel Project: Management Issues and Recommendations 1993-2000

Robert A. Cerasoli
Inspector General
December 2000

The Commonwealth of Massachusetts
Office of the Inspector General

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December 2000

His Excellency the Governor

The Honorable President of the Senate

The Honorable Speaker of the House of Representatives

The Honorable Chairman of the Senate Ways and Means Committee

The Honorable Chairman of the House Ways and Means Committee

The Honorable Chairman of the Senate Post Audit and Oversight Committee

The Honorable Chairman of the House Post Audit and Oversight Committee

The Directors of the Legislative Post Audit and Oversight Bureaus

The Secretary of Administration and Finance

Members of the General Court

Omnibus ad quos praesentes literae pervenerint, salutem.

This report contains correspondence about management issues and recommendations identified by this Office in 22 technical assistance reviews conducted since 1993 at the request of senior management officials at the Central Artery/Tunnel (CA/T) Project. The work of this Office in response to these requests ranges from examining complex design and construction management problems, to critiquing procurement processes, to clarifying legal compliance requirements. Regardless of the topic, the purpose of the reviews has been to identify systemic vulnerabilities to waste and abuse, point out opportunities for savings and cost control, and assist Project leaders to better oversee and manage their own operations.

I have encouraged the Project leadership to call on this Office when an independent, tough, constructive assessment from an impartial third party is needed. An interdisciplinary team within the Office monitors the design and construction of the CA/T Project, scheduled for substantial completion in 2004 at a current estimated cost of $14.1 billion. The team is funded in part by an interdepartmental services agreement

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between the Office and the Massachusetts Turnpike Authority (MassPike). The team focuses its efforts on reviews originating primarily from three sources: staff assessments of management systems that are particularly vulnerable to waste and abuse, legislative directives, and the Project's requests for technical assistance. The 22 reviews included in this report reflect the Office's work in that third, very important category.

The recurring themes of this Office's work, including technical assistance, are probably best summarized in a letter I wrote to MassPike Chairman Andrew Natsios earlier this year. I have, therefore, included a copy of that letter and the Chairman's response as the introduction to this report.

Throughout the 22 reviews undertaken at the Project's request, this Office has consistently offered the advice and urged the actions summarized in the list below:

- Develop the internal organizational capacity to monitor and control costs on management consultant, design, and construction contracts.

- Define performance standards and work products to be delivered under contract; hold vendors accountable for performance, including cost and schedule.

- Guard against conflicts of interest and the appearance of impropriety in the hiring of staff and the assignment of functions among employees and private consultant staff.

- Avoid sole source procurements, which may increase project costs and unfairly favor one vendor over others. Justify any sole source procurement in writing and obtain the requisite review and approval.

- Develop clear Project procedures and guidelines. Ensure compliance with all applicable statutory requirements, procedures, guidelines, and management mandates. (Failure to comply with key directives can increase the Commonwealth's vulnerability to cost overruns and future litigation.)

- Use open and competitive professional services evaluation and selection processes. Define clearly all evaluation criteria, disclose the criteria and evaluation process to all participants, apply criteria consistently, and document the reasons for ranking the proposers and selecting the winning firm.

Based on the written responses to the reviews documented in this report, the Project's track record for decisive action on technical assistance recommendations has been mixed. The Project leadership has been *most* responsive to this Office's recommendations concerning ways to improve proposed systems for procuring management consultant and design-related services.

As can be seen in some of the correspondence, this Office and the Project are not in accord on all matters. For instance, at the Project's request staff of this Office reviewed the Project's incentive fee program. Project managers disagreed with most of

the findings and recommendations and, despite this Office's concerns about the legality of the approach, moved ahead with the program.

While this Office was working on the incentive fee program review, the Project also requested technical assistance in developing a fair and open process for evaluating proposals and selecting a firm to develop a master plan for the Central Artery Corridor. As requested, this Office recommended ways to create a fair and competitive process that would yield the best deal for the Commonwealth. The Project incorporated most of the recommendations and improved the selection process as a result of that exchange of ideas.

This Office will continue to respond to Project management's requests for assistance and I look forward to MassPike's cooperation in these and other matters currently under review.

Sincerely,

Robert A. Cerasoli

Robert A. Cerasoli
Inspector General

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Letter to Chairman Natsios to assist in his review of management systems and practices of the Central Artery/Tunnel (CA/T) Project under the Massachusetts Turnpike Authority

IG Letter:	May 3, 2000
Project Response:	May 31, 2000

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The Commonwealth of Massachusetts

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May 3, 2000

Andrew Natsios, Chairman
Massachusetts Turnpike Authority
10 Park Plaza
Boston, MA 02116

Dear Chairman Natsios:

The purpose of this letter is to assist you as you review the management systems and practices of the Massachusetts Turnpike Authority (MassPike) as it works toward completion of the Central Artery/Tunnel (CA/T) Project. The following provides a brief overview of major management control issues and areas of systemic vulnerability to fraud, waste, and abuse that my Office has identified during nearly nine years of CA/T Project oversight. The points discussed in this letter are recurring themes in my Office's reports, letters, and oral communications, including technical assistance to CA/T Project management and legislatively mandated reviews.

Attached to this letter is a summary of some of the reports and letters issued by my Office related to these themes. It is essential that you now address these issues, which have been inadequately addressed in the past, to help restore faith in the CA/T Project and ensure its ultimate success.

The Commonwealth's excessively broad project management contract with Bechtel/Parsons Brinckerhoff has impeded effective cost control and oversight, undermined public accountability on the CA/T Project, and eroded the Commonwealth's contracting leverage.

The Massachusetts Highway Department (MassHighway)[1] selected the joint venture of Bechtel/Parsons Brinckerhoff (B/PB) from among five firms in 1985 to manage design and construction of the CA/T Project. Since 1985, MassHighway has paid B/PB nearly $2 billion[2] through a series of noncompetitively awarded contracts, also called "work programs." From the beginning, MassHighway has turned over most administrative control and oversight of the Project to B/PB.

---

[1] MassHighway was then the Massachusetts Department of Public Works. For the sake of clarity, this letter uses "MassHighway" to identify the former and current department.

[2] This figure includes insurance premiums and other costs related to the CA/T Project owner-controlled insurance program, which is a topic of great concern to federal and state oversight agencies.

Although MassHighway is the designated recipient agency for federal highway funds and the signatory on the contracts with B/PB, MassPike now negotiates and oversees the contractual arrangement. A state law enacted over my objections in 1997, M.G.L. c. 81A, created the Metropolitan Highway System, designated MassPike as the future owner and operator of the CA/T facilities, and opened the door for MassPike to play a larger role in other arenas. With the approval of the Federal Highway Administration (FHWA) and under written agreement with MassHighway, MassPike now manages design and construction of the CA/T Project, including B/PB's consulting contract.

Under its CA/T-related consulting contracts, B/PB has prepared preliminary designs, overseen -- and, in some cases, performed -- final design work; implemented value engineering reviews and other quality control measures; overseen soils testing and remediation; prepared construction bid packages; overseen construction contracts; negotiated construction contract changes and claims; processed invoices; maintained management information systems; and performed many other functions, including general record-keeping.

B/PB as project manager is responsible for identifying the causes of major cost overruns and delays. In effect, this arrangement relies on B/PB to reveal problems even when such problems are associated with B/PB's own design work. This Office is aware of no evidence that B/PB has ever acknowledged making a mistake that contributed to increased costs and schedule delays. By contracting with B/PB to perform the full range of project management services and to oversee its own work, the Commonwealth has weakened its capacity to exert effective control over the cost and quality of the services B/PB provides.

Moreover, the structure of the contractual arrangement, under which B/PB is paid principally on a cost-plus-fixed-fee basis, fails to create the necessary incentives or to hold B/PB accountable for meeting CA/T Project budget and schedule goals. Most of B/PB's compensation is not tied to deliverables or other measurable performance standards; indeed, project delays and construction contract changes serve to increase B/PB's compensation.

The Commonwealth's near-total dependence on B/PB has eroded its negotiating leverage to the detriment of the public interest. I have repeatedly recommended that the Commonwealth's contractual arrangement with B/PB be reconfigured. CA/T Project officials have largely declined to do so precisely because they depend so heavily on B/PB's expertise. As a result, the problems caused by this contractual arrangement have been perpetuated and exacerbated.

Now is the time to act: MassPike staff is currently negotiating the terms, cost, and duration of the next consulting contract with B/PB. Although CA/T construction is reportedly nearly 60 percent complete, opportunities still exist to strengthen the public interest protections in this contractual arrangement. MassPike should take steps to further reduce the scope of its contract with B/PB[3] and to ensure that B/PB is no longer paid to review its own work. Design-related functions such as value engineering, quality control, quality assurance, and negotiation of construction contract changes and claims should be competitively procured from consultants independent of B/PB or provided by MassPike or MassHighway staff. Reducing the scope of the contractual arrangement with B/PB will enable MassPike to incorporate more meaningful performance requirements, including deliverables, and performance-based compensation provisions into future contracts with B/PB. B/PB has been the only game in town for too long, and taxpayers are paying the price.

The current management organization of the CA/T Project undermines the essential arm's-length relationship between the Commonwealth and B/PB.

In the past, MassHighway was prohibited by M.G.L. c. 29, §29A from allowing B/PB to supervise state employees assigned to manage and oversee the Project. However, MassPike is an independent authority with no such constraints on its organizational arrangements. Under the MassPike umbrella, Project officials have created a so-called "integrated project organization" combining MassPike employees and B/PB employees. According to CA/T Project managers, the integrated project organization was designed to match staff members' technical skills to jobs without regard to the organization paying their salaries.

The resulting organizational scheme has the potential to be an accountability nightmare. For example, MassPike's Director of Construction reports both to B/PB's top program manager and to the MassPike Project Director. This individual (the MassPike Director of Construction) has represented MassPike in contract negotiations with B/PB. This type of arrangement renders the CA/T Project vulnerable to divided loyalties and conflicting interests.

Project management plans prepared by B/PB and approved by the FHWA and the Commonwealth have described the Project as a "dynamic, flexible and harmonious whole." MassPike's integrated project organization is the dangerously misguided product of that concept. Intertwining the CA/T oversight function with the private management consulting function is an invitation to fraud, waste, and abuse. I urge you to take immediate action to decouple and ensure appropriate separation of these two functions.

---

[3] Under the "integrated project organization," discussed elsewhere in this letter, some functions (e.g., environmental services and certain procurement functions) have since 1998 been moved from B/PB's consulting contract to MassPike staff.

Deficient management practices on the CA/T Project have reduced the Commonwealth's capacity to generate accurate cost estimates on individual contracts, control spending, and predict and control future costs.

In letters and reports issued since 1991, my Office has identified numerous management practices that, if left uncorrected, were likely to obscure problems, increase costs, and hamper the CA/T Project's ability to predict and control costs. Recent reports by federal oversight agencies have corroborated my Office's findings. For example, my Office has raised concerns about poor or incomplete CA/T Project design specifications, the approval of major design changes after construction contracts have been advertised and awarded, and the removal of items from the contract scope of services to reduce apparent costs. Cost control -- and the ability to identify potential cost exposure – has also been undermined by poor coordination between design consultants and construction contractors and the CA/T Project's propensity to view large cost overruns as isolated events.

CA/T Project management's avowed commitment to cost-consciousness and cost containment has not always been reflected in the actions and decisions this Office has reviewed. For example, the CA/T Project has frequently employed noncompetitive service procurement methods in the interest of expediency. My Office has questioned and criticized the CA/T Project's award of unadvertised, sole-source contracts, some of which violated public bidding laws. The CA/T Project has also relied on the excessive use of change orders and amendments to existing contracts in order to procure work that was not included in the original scopes of services for those contracts.

Moreover, the CA/T Project's final design work for buildings and many of the value engineering reviews failed to assess the post-construction operations and maintenance (O&M) costs. Because O&M costs – a key factor in life-cycle costs – will be paid almost entirely by the Commonwealth, these costs should have been a significant factor in the decision-making processes throughout design and construction. These and other programs aimed at cost-saving opportunities have been flawed not in concept, but in execution.

This Office's reports and letters have consistently highlighted another deficient management practice: CA/T Project staff have ignored or circumvented internal management controls embedded in the CA/T Project's own written policies, procedures, guidelines, and agreements. For example, the CA/T Project's cost control efforts have been undermined by its own failure to consistently conduct claims avoidance reviews and other cost-control measures, document deficient site conditions, or invoke contract provisions that penalize poor performance.

My Office has also found that poor documentation practices have fragmented the official record, thereby reducing the Commonwealth's capacity to trace substandard performance to the root cause or responsible party. For example, the CA/T Project's sporadic failure to document negotiation of change order work and deficient contractor performance in the field can obscure problems that have major cost and schedule implications.

My strenuous warnings to the Legislature concerning the CA/T Project price tag and funding plans in 1997 are as true now as they were then: No one knows with any reasonable degree of certainty how much we, the Commonwealth, will have to pay for our share of the CA/T project, or how we will pay it, or who among us will pay it. Under any scenario, state leaders will face painful decisions and must retain control concerning the CA/T project in order to insure the public's representation in these decisions. The Legislature, over my objections, granted enormous power to MassPike with respect to the CA/T Project. Along with that power are significant reporting and accountability requirements. Your publicly stated commitment to candor and full disclosure indicate that you will honor those responsibilities.

The systemic management deficiencies outlined in this letter and documented in the attached listing of related Office reports and letters have contributed to the escalating cost of the CA/T Project. In providing you with this overview of the Office's perspective and previous work on the CA/T Project, I hope to contribute to your work to reform the CA/T Project and restore the trust of federal and state officials as well as the public trust. My Office stands ready to assist you on these and other matters. Please contact me or Wendy Haynes on my staff if you have any questions or need any assistance.

Sincerely,

Robert A. Cerasoli

Robert A. Cerasoli
Inspector General

Attachment

Selected CA/T Project Oversight Reports and Letters
Issued by the Massachusetts Office of the Inspector General
(1991-2000)

1991

- The Inspector General issued a report identifying fundamental flaws in the selection process used to obtain CA/T Project audit services from private firms, including inadequate planning and analysis, vulnerability to favoritism, and unnecessarily costly contracting practices. The report recommended a prudent, cost-conscious procurement process for audit services.

- The Office criticized MassHighway's Project Management Plan for failing to clearly describe MassHighway's oversight role, failing to show how Bechtel/Parsons Brinckerhoff (B/PB) would be held accountable for bringing the Project in on time and within budget, and inappropriately assigning key Project oversight roles to B/PB.

- The Office advised the Executive Office of Transportation and Construction that a financing plan prepared by Lazard Freres & Company was erroneous and misleading: it overstated MassHighway's progress on design of the CA/T Project, omitted key factors that could dramatically increase Project costs and delay the Project schedule, and failed to provide a reliable and objective analysis of the Project's future costs, including operations and maintenance costs.

1992

- The Office wrote to the Project Director regarding MassHighway's reimbursements of more than $2.11 million to B/PB for the cost of relocating the families of B/PB employees hired to work on the CA/T Project. The Office identified wasteful management practices, including poor documentation, lack of oversight, and specific abuses of the reimbursement system.

1993

- The Inspector General issued a report criticizing MassHighway's lack of planning, frequent disregard for cost, and repeated missteps in the development of the Operations Control Center Complex, a multimillion-dollar building complex housing administrative and maintenance functions, including a $95 million control system, for the CA/T Project. The report recommended a series of corrective actions to reduce the Commonwealth's exposure to waste and public safety problems.

- The Office advised MassHighway that MassHighway lacked the expertise and resources to conduct a meaningful review of the effectiveness of the its relationship with B/PB and expressed concern that MassHighway and B/PB seemed to have melded into a single unit. The Office recommended that MassHighway develop the internal capacity to manage its contractual relationships competently and cost-consciously and to provide effective oversight of B/PB.

- The Office wrote to MassHighway warning that cost savings from the proposed Alternative Dispute Resolution (ADR) Program for the CA/T Project were unsubstantiated and that the ADR Program created another avenue for contractors to pursue payment over and above the original bid amount. The Office recommended specific improvements aimed at increasing the accountability, clarity, and cost-effectiveness of the ADR Program.

- The Office documented a pattern of apparently excessive use of contract modifications and change orders associated with design and construction-related contracts on the CA/T Project. The Office advised MassHighway that the large number of design contract modifications portended construction cost escalation far beyond the estimated $7.7 billion price tag.

1994

- The Inspector General issued a report revealing that MassHighway and B/PB had mismanaged an eight-year, $10.9 million contract with DeLeuw, Cather & Company to design the CA/T Project's integrated project control system. The report documented massive cost overruns, schedule slippages, poor performance, and contract violations that B/PB as contract manager had failed to address. Warning that these problems were not unique, the report recommended that MassHighway institute a series of contracting safeguards, cease the practice of using contract modifications and change orders to make up for incomplete preliminary and final design work, and increase the contract administration and technical staff assigned to the CA/T Project.

- The Inspector General issued a report revealing that the CA/T Project's value engineering program, which was managed by B/PB, had been plagued from the beginning by a lack of independence, delays, misinformation, management errors, and an absence of management commitment to value engineering. The report found that MassHighway had forgone and was continuing to forgo opportunities to simplify designs and achieve significant cost reductions. Although the value engineering program had identified cost-saving recommendations estimated to save $2.8 billion, the recommendations implemented by the CA/T Project had saved only an estimated $325 million. In one case, MassHighway's poor planning, erratic decision-making, and overreliance on B/PB led MassHighway to reject a value engineering recommendation that could have saved taxpayers an estimated $13 million. The report concluded that significant opportunities for controlling costs through value engineering still remained and recommended eliminating B/PB from its pivotal role in managing the value engineering program, conducting a comprehensive review of the program, and remolding the program to ensure its independence and usefulness as a cost control tool.

- The Inspector General issued a report criticizing MassHighway's internal audit function for the CA/T Project. The report found that inefficient internal audit processes, audit delays, untimely audits, and insufficient audit staff resources jeopardized federal reimbursement for the CA/T Project, thereby risking an unnecessary increase in the state's share of CA/T Project costs. The report recommended specific measures aimed at strengthening MassHighway's internal audit procedures and capacity.

- The Office notified MassHighway that it had violated a state law requiring survey services to be awarded to the lowest responsible and eligible bidder by paying B/PB more than $9.4 million for survey services provided through a B/PB subconsultant.

- The Office notified MassHighway that its sole-source, negotiated, $5.5 million procurement of Inverset Technology violated the state's public works bidding law.

- The Office alerted MassHighway to large change orders and contract administration problems on a $32 million construction contract to relocate the Porter Street outfall sewer. The value of the contract had grown by 56 percent since 1991. The Office also found that B/PB, which managed the contract on behalf of MassHighway, had failed to adequately document the change orders or to take effective action in response to the contractor's noncompliance with contract specifications.

- The Office criticized B/PB's deficient handling of a no-bid, $414,700 change order for odor control measures on MassHighway's third harbor tunnel construction contract. B/PB had failed to anticipate the need for the change order, had allowed the tunnel contractor to violate project procedures, and had underestimated the cost of the change order work. The Office recommended that MassHighway revamp its change order process by requiring B/PB to obtain competitive prices and to justify the approach and price of each change order.

- The Office informed MassHighway that MassHighway's procurement of a $231,526 fireboat for the city of Boston violated the state's procurement statute, that MassHighway had paid $100,000 more than the actual cost of the fireboat to the contractor, and that because the FHWA had declined to participate in funding the fireboat, the full cost was borne by Massachusetts taxpayers.

1995

- The Inspector General issued a report revealing that internal control weaknesses in the CA/T Project's asset management system, which was managed by B/PB, could lead to theft, fraud, and misuse of the Commonwealth's assets. The report recommended that MassHighway adopt a series of corrective actions, including procurement of an independent audit of B/PB's procedures.

- The Inspector General, the Attorney General, and the State Auditor sent a joint letter to the Secretary of Transportation and Construction regarding MassHighway's practice of assigning staff (referred to as "seconded" employees) paid by private firms through MassHighway's contract with B/PB to perform MassHighway functions on the CA/T Project. The joint letter warned that this arrangement created divided loyalties, resulted in pay and benefit inequities among staff performing similar functions, created the appearance of a conflict of interest, and could violate state law. The joint letter recommended that MassHighway abandon the practice, provide eight top managers funded by B/PB with training on the state's conflict of interest law, and ensure that all key B/PB personnel were duly designated in the contract.

- The Office advised MassHighway of problems with the CA/T Project's use of waivers to state service contracting regulations. Specifically, the CA/T Project's practices violated state service contracting regulations, put the Commonwealth and its consultants at financial risk, and produced waivers that misstated the cost of the services for which waivers were granted and the amount of funding to be provided by the FHWA.

- The Office criticized MassHighway and B/PB for mismanaging a contract with DeLeuw, Cather & Company for the CA/T Project's integrated project control system. Problems cited by the Office included tolerance of cost overruns and poor consultant performance, waste of $[illegible]00,000 for an "independent" assessment of the contract by B/PB's home office staff, and recovery of only $1.7 million when only 20 percent of the $6.5 million contract had been delivered. The Office also warned MassHighway that its pending plans to add nearly $7 million in services to the contract with DeLeuw, Cather & Company would violate state services contracting regulations.

- The Office wrote to MassHighway criticizing the CA/T Project's planned $107 million project known as "Parcel Seven." The Office found that the CA/T Project had failed to conduct a value engineering review, to comply with the state designer selection law, and to identify and estimate the cost of mitigation measures called for in the contract.

1996

- The Office warned MassHighway that its near-total reliance on B/PB created significant and unnecessary financial risk, ignored cost containment opportunities from competition in the marketplace, and failed to serve pressing accountability requirements. The Office pointed out that MassHighway was not holding B/PB accountable for meeting the CA/T budget and schedule or for producing deliverables or other measurable results. Instead, MassHighway was paying B/PB on a cost-plus-fixed-fee basis. The Office recommended reconfiguring MassHighway's contractual relationship with B/PB.

- The Inspector General issued a report on the CA/T Project's value engineering change proposal program, a cost containment effort that allows construction contractors to recommend design or construction changes to improve efficiency or lower costs. The report revealed that MassHighway and B/PB were not aggressively pursuing or managing this and other cost control programs to meet the goal of bringing the CA/T Project in on time and within budget. Of the $17 million in estimated savings from changes recommended by the contractor, only $1.7 million, or 10 percent, had been accepted by the CA/T Project during the period reviewed.

- The Office criticized B/PB's handling of an internal investigation of an allegation of deficient B/PB construction management practices. The Office's 1995 review of B/PB's response revealed that B/PB had ignored some of its own audit findings, inaccurately reported its findings to MassHighway, ignored MassHighway's directions to pursue certain issues, and compromised the independence of a second audit of B/PB's construction management practices. The second phase of the Office's review criticized B/PB's failure to comply with key Project policies aimed at containing costs and safeguarding public funds. B/PB also failed to effectively monitor and document its own activity. The Office recommended that MassHighway increase its oversight of construction management by developing an independent quality assurance program.

- The Office advised MassHighway to exercise caution in implementing a proposed pilot project to accelerate the bid, evaluation, and award cycle on the CA/T Project. The Office's analysis indicated that the causes of the CA/T Project's excessively lengthy bid cycle extended far beyond the focus of the pilot project to B/PB's project management problems. The Office found that addenda and change orders were routinely used to make up for incomplete designs and poor planning and coordination. Accordingly, the Office advised MassHighway to save time and money by curtailing its practice of using addenda to manage design or construction work after advertising the work.

- The Office criticized MassHighway's handling of the construction of Ventilation Building No. 3 on the CA/T Project. The Office's review disclosed that MassHighway did not employ two cost containment measures and that the estimated contract cost had increased by 60 percent with little explanation. In addition, the Office found that inadequate planning and a complicated right-of-way agreement could increase CA/T Project costs in the future.

- The Office alerted MassHighway to problems in the CA/T Project's process for selecting a geotechnical instrumentation firm for a $17 million contract. These problems included vague selection criteria, the risk of "bait-and-switch" tactics by potential contractors, and overreliance on B/PB in the selection process.

- The Office sent a letter to the CA/T Project summarizing the Office's key findings and recommendations resulting from statutorily mandated contract reviews conducted by the Office between 1994 and 1996. The Inspector General subsequently issued a report containing a compilation of the reviews and the Project's written responses. The major corrective measures recommended by the Office in these reviews focused on instituting proactive and aggressive cost containment measures, analyzing the causes of cost estimate increases, minimizing the use of no-bid change orders, clearly defining mitigation commitments in construction contracts, obtaining federal funding approvals before the construction cycle begins, and maximizing federal funding.

1997

- The Inspector General issued a report on the CA/T Project's materials testing laboratory function. The report disclosed that at least $5 million had been spent unnecessarily for design, renovation work, relocation expenses, and fees paid to B/PB in connection with the laboratory. The report criticized B/PB for failing to provide MassHighway with accurate cost information or consider using existing laboratories, and for giving no-bid work worth $621,000 to a Bechtel subsidiary.

- The Inspector General warned the Legislature that the proposed metropolitan highway system bill constituted a wholesale grant of powers to the Massachusetts Turnpike Authority (MassPike) that unnecessarily increased the Commonwealth's financial vulnerability in the construction, operation and maintenance of the CA/T Project. The Inspector General expressed concern that the cost of the CA/T Project would ultimately exceed $12 billion. The Inspector General recommended amendments to the bill, including sunset provisions; debt issuance safeguards; and controls over real property dispositions by MassPike. The Inspector General communicated his objections in writing and underscored his concerns during a meeting with the House Committee on Long Term Debt and Capital Expenditures.

- An investigation by the Office disclosed evidence that copper cable had been cut and removed from a CA/T Project building storing electrical equipment and approximately $300,000 of copper cable purchased for the CA/T Project. The Office also discovered that the building was not secure and that the equipment and material stored in the building were not adequately inventoried. The Office informed MassHighway of the problem and recommended measures to secure the building and inventory all warehoused equipment and materials.

- The Office sent a letter to MassHighway reporting on the Office's examination of the cost of the early opening of the third harbor tunnel, now known as the Ted Williams Tunnel. The Office's review disclosed that MassHighway had underestimated the cost of, and might have overestimated the economic benefits of, the accelerated early opening; the Office also found that the FHWA did not fund all early opening cost. The Office expressed concern that costly early opening initiatives would in the future increase the financial burden of the CA/T Project on Massachusetts taxpayers.

- The Office expressed concern to MassHighway regarding the CA/T Project's failure to aggressively pursue all available cost containment measures, including value engineering reviews, claims avoidance reviews, and peer reviews. The Office also criticized MassHighway's slow delivery of documents and failure to produce certain evidence until after public criticism by the Office.

- The Office advised MassHighway that B/PB's bidder attraction program was a poorly conceived and mismanaged effort to increase competition for CA/T construction contracts. B/PB had not developed an adequate scope and action plan for the project, had used an incomplete and subjective methodology in selecting firms to contact, had violated state procurement policy in hiring a program subcontractor, and had hired a subcontractor that appeared unqualified for the job.

1998

- The Inspector General issued a report on the CA/T Project's handling of two no-bid change orders amounting to $850,000 on a $78.2 million tunnel finishes contract, which had increased by 58 percent over the original bid amount. The report revealed a host of problems, including poor design specifications for anchor bolt installation, unclear bolt testing procedures, payment for improper installation of anchor bolts, and poor coordination between designers and contractors. The report recommended a series of measures designed to improve the CA/T Project's construction contract specifications, design coordination, contractor oversight, and cost recovery actions.

- The Office conducted a review of the CA/T Project's East Boston Toll Facility contract showing that the CA/T Project was not implementing its own cost containment program, that it had seriously underestimated the cost of the facility, that it had incurred unnecessary costs, and that it had failed to prepare a life-cycle cost analysis for the facility. The Office's review also revealed that the design calculations relating to loads on the toll plaza canopies were not prepared by a Massachusetts registered enginee. and that they had not been reviewed or checked by a senior architect or engineer at the design firm responsible for the calculations. These calculations did not appear to take into account wind against the north side of the canopies and weight of signage on the canopies, thus creating a potential public safety hazard. The Office recommended that MassHighway take steps to address these problems.

- The Office provided MassHighway with the results of a review of the CA/T Project's resident engineer filing system. The Office found weaknesses in the collection and maintenance of information by B/PB field staff. The Office advised MassHighway to hold B/PB accountable for maintaining project records vital for contractor accountability and protection of the public interest.

- The Office sent MassHighway a letter criticizing the CA/T Project's request for qualifications/proposals for public information outreach services estimated to cost $2 million. The Office pointed out that spending public funds to sell the CA/T Project to a public that is already paying for the Project was wasteful, especially in view of the public information staff and subconsultants already in place in the B/PB organization.

- The Office informed the Executive Office of Transportation and Construction, the Massachusetts Bay Transportation Authority, the Massachusetts Port Authority, MassHighway, MassPike, and the CA/T Project of the cost-saving potential of the CA/T's materials testing program. The Office's review of other materials testing programs revealed that some entities paid different prices for the same services offered by testing firms. The Office recommended that the entities included in the review consider the options of establishing a statewide materials testing laboratory, establish a statewide blanket contract for testing services, and establishing interagency agreements for testing services.

1999

- The Office's review of documents relating to the CA/T Project's Ventilation Building No. 1 revealed that the Commonwealth had apparently paid twice for the design of a portion of the building. In addition, B/PB had prepared the final design drawings for a portion of the building; thus, B/PB as project manager was reviewing, critiquing, and approving its own work in circumvention of the CA/T Project's system of accountability. The Office's review disclosed no evidence that the CA/T Project had prepared a life-cycle cost analysis comparing the operating and maintenance costs of different design options; it also disclosed that the CA/T Project had failed to comply with certain public notice requirements contained in M.G.L. c. 149. The Office also expressed concern that certain project drawings had not been stamped, signed, and dated by a professional engineer registered in Massachusetts. On this ventilation building and another (No. 5) in South Boston, the Office warned of potentially costly problems arising from site access delays. The Office advised the CA/T Project that some of the issues identified in the Office's reviews might warrant withholding approval for the commencement of work on these two contracts under Section 67 of Chapter 205 of the Acts of 1996.

- The Office's review of documents relating to the CA/T Project's Ventilation Building No. 8 disclosed that the building design interfered with an easement granted to the Fleet Center by MassHighway, necessitating significant redesign work estimated to cost the CA/T Project $2.5 million more than originally planned. The Office questioned the CA/T Project's failure to consider some of the cost savings identified during the redesign effort, such as elimination of some rooms and simplification of the roof design. The Office estimated that a value engineering review of the design could have generated cost savings of as much as $1 million. The Office also found that the CA/T Project had not conducted a formal claims avoidance review for the contract, nor had the CA/T Project completed a formal life-cycle cost analysis for the contract. The Office criticized the CA/T Project for considering cost control measures only in response to unanticipated cost increases, rather than implementing such measures in the normal course of business. The Office also criticized the CA/T Project's practice of allowing design work to be authorized based on oral direction from Project staff, in contravention of the procedures set forth in the contract. The Office expressed concern about possible errors and inconsistencies in the design drawings, including fire protection drawings. Finally, the Office found that hundreds of drawings lacked a stamped seal and dated signature of a professional architect or engineer registered in Massachusetts.

- The Office's review of documents relating to the CA/T Project's pending East Boston toll facility construction contract, estimated at $7.5 million, disclosed numerous drawings that either lacked professional seals or bore illegible seals. The Office questioned the high design cost for the toll facility relative to its estimated construction cost. The Office also criticized the CA/T Project for failing to redesign the toll booth canopies – at an estimated savings of nearly $1.5 million – until after the designer had prepared the original bid package. The Office's review found no evidence that the CA/T Project completed a formal life-cycle cost analysis for the contract; such a review might have led to this redesign earlier, thereby avoiding the schedule impact of last-minute redesign work.

- The Office provided comments and recommendations on the CA/T Project's Request for Qualifications and Proposal (RFQ/P) for the Central Artery Corridor Master Plan. The Office's recommendations focused on clarifying the scope of services, procedural requirements, and evaluation criteria contained in the RFQ/P; providing a level-playing field throughout the process for all proposers; documenting the selection process; and ensuring that the terms and conditions of MassPike's executed contract are consistent with the terms and conditions of previous CA/T Project contracts executed by MassHighway.

- The Inspector General issued a report alerting the Legislature to at least four steps the Office had recommended to the CA/T Project as a result of legislatively mandated reviews: conduct cost containment reviews; identify future operations and maintenance costs; identify and explain cost estimate increases; and comply with professional engineering practices. Noting that the letters targeted issues at the heart of cost and performance, the report provided a compilation of the reviews and the Project's written responses.

2000

- The Office wrote to the CA/T Project regarding the Incentive Fee Program, used on the CA/T Project's tunnel finishes contract, under which the construction contractor was given a financial incentive to meet or beat contract milestone dates, to mitigate certain delays without filing financial claims, and to work more cooperatively and efficiently with other contractors and CA/T Project staff. The Office's review revealed that Incentive Fee Program provisions contained inadequate safeguards against fraud, waste, and abuse. Specifically, the Office criticized the Program's lack of contractor oversight, its discretionary and subjective rating system, the unilateral authority of a single manager to change Program rules, and the lack of Program procedures and documentation requirements. The Office also expressed the view that the Program could violate Massachusetts public bidding laws.[1] The Office recommended a series of measures to improve the Program, including evaluating the Program costs and benefits, developing objective criteria for contractor performance evaluation, strengthening Program rules and safeguards, and instituting disincentive clauses to discourage poor contractor performance.

- The Inspector General sent a letter to a Joint Special Commission of the Legislature expressing his views concerning the CA/T Project's $1.4 billion cost overrun first reported by Project leadership in February 2000. The Inspector General advised the Special Commission that state oversight agencies had not received the CA/T Project's October 1999 Finance Plan until February 17, 2000 and that the October 1999 Finance Plan provided no warning of the $1.4 billion overrun. Moreover, the October 1999 Finance Plan was not responsive to the legislative mandate in the Metropolitan Highway System legislation enacted in 1997; this legislation specifically required that the CA/T Project report on the CA/T Project status and schedule as well as the Commonwealth's ability to fund the state's share of the CA/T Project. In the letter, the Inspector General reiterated his position that the "partnering" model on which the contractual arrangement between MassHighway and B/PB is based fails to promote accountability and impedes rigorous oversight of the consultant's performance. The Inspector General pointed out that the Office had warned years ago that CA/T Project costs could exceed $12 billion and had repeatedly criticized CA/T Project managers for failing to implement cost containment measures such as value engineering in the early stages of the Project, when such measures could have had the greatest impact. The Inspector General urged the Special Commission to scrutinize the full life-cycle costs of the CA/T Project, including debt costs and operation and maintenance costs. Finally, the Inspector General advised the Special Commission that the Office had not consistently received timely information from the CA/T Project and that no oversight agency, including the Office, has been given access to the CA/T Project's Oracle database, despite repeated requests.

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[1] The Office has requested an opinion on this matter from the Office of the Attorney General.

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MASS PIKE

MASSACHUSETTS TURNPIKE AUTHORITY
State Transportation Building, 10 Park Plaza, Suite 4160, Boston, MA 02116
(617) 248-2800

ANDREW S. NATSIOS
Chairman

CHRISTY P. MIHOS
Vice Chairman

JORDAN LEVY
Board Member

May 31, 2000

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JUN _ 7 2000

OFFICE OF
INSPECTOR GENERAL

Robert A. Cerasoli, Inspector General
Office of the Inspector General
One Ashburton Place, Room 1311
Boston, MA 02108

Bob

Dear ~~Inspector General~~ Cerasoli:

Thank you for your letter of May 3 which presented your concerns regarding the management systems and practices at the Central Artery /Tunnel (CA/T) Project. I have read it carefully and found your summary of concerns to be most helpful.

The Massachusetts Turnpike Authority recognizes its obligation to manage the CA/T Project efficiently and openly. We plan to initiate independent reviews of critical Project components such as the Work Programs with Bechtel/Parsons Brinckerhoff (B/PB) and the Owner Controlled Insurance Program (OCIP). As part of our assessment, we will be drawing on the expertise of the academic community as well as practitioners in the field of public administration.

Please be assured that the management issues identified by your office in the past and summarized in your recent letter will receive careful consideration as we move the Project ahead.

Sincerely,

Andrew S. Natsios

Andrew S. Natsios

Operator of the Turnpike, Ted Wi umner and Callahan Tunnels

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SECTION ONE

Technical Assistance Review of I-93 Temporary Ramp Procurement

Assistance Requested:	January 29, 1993
Assistance Letters:	March 23, 1993, August 10 1994, December 16, 1994, March 1, 1995
Project Responses:	April 14, 1994, August 11, 1994, January 12, 1995, March 16, 1995

Note: The Project requested that this Office review the construction of the I-93 temporary loop ramps through an approximately $20 million change order to a pre-existing construction contract. This Office's preliminary assessment indicated that the use of a change order might violate state law and contravene the public policy goals of the statute. After a review of subsequent events and information provided by the Project, this Office concluded that the Project violated state law by procuring sole-source construction materials. The Project disagreed with this Office's conclusion and proceeded with the procurement of materials and the subsequent construction of the ramps.

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Massachusetts Highway Department
Central Artery/Tunnel

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OFFICE OF
INSPECTOR GENERAL

January 29, 1993

Inspector General Robert A. Cerasoli
Office of the Inspector General
One Ashburton Place
Boston, MA 02108

Dear Inspector General Cerasoli:

The purpose of this letter is to seek your informal opinion concerning a proposed plan to construct certain temporary loop ramps connecting the CANA tunnels in Charlestown to I-93.

The nearly completed CANA Project initially was intended to connect the CANA tunnels in Charlestown with I-93 by means of permanent loop ramps that would have extended out from the CANA tunnels and looped under and west of I-93 before merging with I-93 traffic lanes. Those permanent loop ramps were expected to be built under a separate CANA construction contract. Due to uncertainty over the Central Artery's final design for the Charles River crossing, however, no contract was awarded for the permanent loop ramps.

Recently, it was determined that temporary loop ramps, instead of permanent loop ramps, would be installed in the same general area. Direct hire of the on-site CANA contractor, Perini/Kiewit/Atkinson (P/K/A), that currently is finishing a $180M contract to construct the CANA tunnels, was recommended by the Project as the fastest, most efficient, and least expensive means to accomplish the temporary loop ramps.

This recommendation was discussed with FHWA, which had no objection to P/K/A doing the work but will not approve the process until it has reviewed the SDC's 75% design drawings, estimated for sometime in March. See letter attached. The temporary loop ramps currently are estimated to cost approximately $17M.

The P/K/A CANA tunnels contract, which includes removal of certain temporary (non-loop) ramps and landscape restoration, cannot be completed until the new, temporary loop ramps are installed to accommodate existing traffic currently being handled by the temporary (non-loop) ramps.

As you know, FHWA funds 90% of most Central Artery construction. Based on recent discussions with FHWA, we understand that it views this situation as not requiring competitive bidding. Its comments to us are that the additional work is less than 10% of P/K/A's base contract and is in the same geographical area as the CANA tunnels, factors it considers to be controlling. (We note also that the federal criteria is the same as state criteria). FHWA is reluctant, however, to approve an extra work order before the design is sufficiently progressed, as indicated in its letter.

At your earliest convenience, please advise whether you approve the Project's recommendation to award this work directly to P/K/A, subject to FHWA approval. If you have any questions, please feel free to contact me or Tony Battelle (951-6076) Chief Legal Counsel at the Central Artery.

Very truly yours,

Peter M. Zuk
Project Director

PMZ/AEB/jac

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093-379

The Commonwealth of Massachusetts

Office of the Inspector General

One Ashburton Place, Boston, MA 02108

ROBERT A. CERASOLI
INSPECTOR GENERAL

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March 23, 1993

Peter Zuk, Director
Central Artery/Tunnel Project
One South Station; Fourth Floor
Boston, Massachusetts 02110

Dear Mr. Zuk:

The purpose of this letter is to confirm my March 5th telephone conversation with Anthony E. Battelle, Chief Counsel for the CA/T project, in which I responded to your January 29, 1993 request for an informal opinion from this Office. In the conversation, I said that based on your letter's description and Massachusetts construction bid laws the Department would not be vulnerable to criticism from this Office for issuing an extra work order to Perini/Kiewit/Atkinson for constructing the CANA/I-93 connecting temporary loop ramps.

During that conversation, I also observed that the monetary value of an extra work order is a key factor in the test to determine if a proposed action is incidental to the original contract and thus, permissible under the law. Therefore, if the price of the extra work order exceeds the present estimated value of $17 million, it would reopen the question of fact under the law. I went on to say that this Office offers no assurances regarding the Department's vulnerability to criticism on issues of cost effectiveness and prudent planning in this instance.

We will loan pertinent materials and case law information to staff of the Attorney General's Office, upon request, to expedite their response to the CA/T Project's request for an informal opinion. In closing, we appreciate being consulted on this matter. Please do not hesitate to contact me if you have any questions regarding this letter.

Sincerely,

Wendy Haynes, Chief
Contract Audit Review Division

cc. Janet Werkman, OIG General Counsel
Anthony E. Battelle, CA/T Project Chief Counsel
Peter Sacks, Assistant Attorney General

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Massachusetts Highway Department
Central Artery/Tunnel

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OFFICE OF
INSPECTOR GENERAL

April 14, 1994

Wendy Haynes
Deputy Inspector General
for Contract Audit and Review
Office of the Inspector General
One Ashburton Place
Boston, MA 02108

Re: ANOC/CANA Temporary Loop Ramps

Dear Ms. Haynes:

On January 29, 1993, we wrote to the Inspector General requesting an opinion concerning construction procurement for the temporary loop ramps in East Cambridge via an extra work order ("EWO") to Perini/Kiewit/Atkinson ("PKA"), the prime contractor who was then working on the CANA Tunnels Project in Charlestown. Your office approved the proposed procurement by extra work order in a letter dated March 23, 1993.

At the time of our request, we gave you an estimated construction value of $17 million for the temporary loop ramps. The $17 million figure was based on an estimate that had been prepared by our management consultant as part of a December 30 letter to FHWA initially recommending construction of the temporary loop ramps T-C/C-T (FHWA had not yet approved the concept). This letter further recommended that the ramps be constructed through an extra work order to PKA, the onboard CANA Contractor, in order to allow for the earliest possible use of the CANA tunnels. Our cost estimate of $17 million was within ten percent of $179,792,256, the value of PKA's contract for the CANA tunnels, and that appeared to be an important factor in your subsequent approval letter.

The advantages of procuring via an EWO included an estimated time saving in completing the ramps of five to six months, thereby alleviating a chronic traffic and safety problem in the weave area on the I-93 bridge much sooner than otherwise would be possible, and projected cost savings in closing out PKA's CANA contract that could not be completed until the temporary loop ramps were built.

One South Station • Boston • Massachusetts • 02110 • Phone 617-951-6000 • Fax 617-951-0897

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In a January 15 response to the Commissioner's December 30 letter, FHWA concurred with our justification of the need for the temporary loop ramps and approved proceeding with design but held in abeyance its approval of the request for construction procurement via an extra work order until design had progressed to the 75% level, stating that it was too early to assess the desirability of procurement via an EWO.

Recognizing the merits of expediting construction of the ramps, in letters of January 28 and February 12, FHWA offered to discuss and consider procurement of some construction materials/products that were on the critical path and/or required long lead times for delivery. FHWA also indicated that the temporary loop ramps were especially well suited to innovative or experimental product usage. In particular, it suggested the use of Inverset technology, first proposed by the GPI, the section design consultant.

As a result of the above evaluations and discussions, the Department adopted the concept of advanced materials procurement. The Department purchased steel products in April, 1993, through a competitive process for $2.6 million, thereby reducing the scope of work that would have to be procured via a negotiated EWO.

The Department also determined to use the innovative and experimental Inverset technology for the loop ramps superstructure. This technology is a proprietary item and could be obtained through only one source. The Department purchased the Inverset superstructures directly instead of including it in the extra work order to PKA, in part to save the cost of a markup by PKA that customarily would be approximately 10%. The materials procured as Inverset technology cost $5.4 million, thereby reducing further the scope of the proposed EWO.

As a result of these two separate purchases, the original negotiated price of the EWO to PKA was only $10.4 million, a figure significantly lower than the originally estimated $17 million total cost. The actual total original cost of the temporary loop ramps, however, was $18.4 million ($2.6M, $5.4M, and $10.4M).

Changes in the scope of the steel procurement and in the EWO will increase that total actual cost figure for the loop ramps to approximately $19.6 million. On a separate sheet enclosed, we have summarized the nature and cost of all changes involving the temporary loop ramps.

Massachusetts Highway Department
Central Artery/Tunnel

The $18.4 million original cost of the extra work order, the Inversets, and the steel slightly exceeds 10% of the value of PKA's original contract. The extra work order at issue, however, is only $10.4 million, and therefore it appears that the EWO as negotiated falls well within the IG's approval as stated in its March 23, 1993 letter, because it represents only 5.8% of the original PKA contract.

I am writing to confirm that these circumstances do not affect your approval of the method of procurement. We are enclosing a number of letters (highlighted to assist in expediting your review) that you may find relevant. If you require further information from us, we are pleased to provide it.

Very truly yours,

MASSACHUSETTS HIGHWAY DEPARTMENT

Peter M. Zuk
Project Director

PMZ/AEB/jac

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094-1201

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The Commonwealth of Massachusetts

Office of the Inspector General

One Ashburton Place, Boston, MA 02108

ROBERT A. CERASOLI
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August 10, 1994

Peter Zuk, Director
Central Artery/Tunnel Project
One South Station; Fourth Floor
Boston, Massachusetts 02110

Dear Mr. Zuk:

I am responding to your April 14, 1994 letter in which you asked if the new information you provided affected this Office's earlier comment on the award of an extra work order to Perini/Kiewit/Atkinson for the construction of the Central Artery North Area (CANA) temporary loop ramps.

As you know, on January 29, 1993, you requested an informal opinion on whether the Massachusetts Highway Department (the Department) would be vulnerable to criticism from this Office for issuing an extra work order to Perini/Kiewit/Atkinson for constructing the CANA/I-93 connecting temporary loop ramps. On March 23, 1993, this Office responded: "[B]ased on your [January 29, 1993] letter's description and the Massachusetts construction bid laws the Department would not be vulnerable to criticism . . . for issuing an extra work order[.]"

We have examined your April 14, 1994 letter and attachments. The new information you provided does not change this Office's March 23, 1993 opinion regarding the narrow question you posed concerning the extra work order.

Nevertheless, the new information does raise other issues. First, according to the new information, the Department did not competitively procure Inverset Technology as required under Massachusetts construction bids laws, including M.G.L. Chapter 30, §39M. It is unclear under what authority the Department purchased, on a sole source basis, $5.5 million in Inverset Technology. Second, the overall price for constructing the CANA temporary loop ramps has increased from $17 million to approximately $19.6 million -- an increase of $2.6 million (15.3 percent) over your earlier estimate. Rising CA/T Project cost is an ongoing concern of this Office.

As before, our opinion is directed to the question you posed. We have not examined and are not commenting on the cost effectiveness or prudence of the Department's action on the CANA temporary loop ramps project.

On or before September 1, 1994, please advise this Office on the source of the Department's authority to sole source purchase the Inverset Technology. Feel free to contact me if you have any questions regarding this letter.

Sincerely,

Wendy Haynes
Deputy Inspector General for
Contract Audit and Review

cc: James J. Kerasiotes, Secretary
William Flynn, Deputy Project Director
Anthony E. Battelle, Chief Legal Counsel

Massachusetts Highway Department
Central Artery/Tunnel

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AUG 16 1994

OFFICE OF
INSPECTOR GENERAL

August 11, 1994

Wendy Haynes
Deputy Inspector General
for Contract Audit and Review
Office of the Inspector General
One Ashburton Place
Boston, MA 02108

Re: ANOC/Temporary Loop Ramps: Inverset Technology Procurement

Dear Ms. Haynes:

In response to your August 10, 1994 letter, enclosed is a memorandum concerning the source of the Department's authority for the procurement process used in obtaining the Inverset Technology for the temporary loop ramps.

I hope that the memorandum satisfies your concerns, however if you require further information please feel free to contact Chief Legal Counsel Anthony E. Battelle (951-6076) or Louis J. George (951-6372) of my legal staff.

Sincerely yours,

MASSACHUSETTS HIGHWAY DEPARTMENT

Peter M. Zuk
Project Director

PMZ/LJG/bh

Enclosure

cc: James J. Kerasiotes
William S. Flynn
Anthony E. Battelle

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The Commonwealth of Massachusetts

Office of the Inspector General

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December 16, 1994

Peter M. Zuk, Project Director
Central Artery/Tunnel Project
One South Station; Fourth Floor
Boston, Massachusetts 02110

Dear Mr. Zuk:

I am writing to advise you that MassHighway did not have the authority to purchase Inverset Technology through a sole-source negotiated procurement. MassHighway violated M.G.L. c.30, §39M, the public works bidding law, by undertaking this multi-million dollar procurement without public advertising.

As you will recall, by letter dated August 10, 1994, this Office noted that MassHighway did not seek bids for the CANA (Central Artery/North Area) temporary loop ramps, as required by State public bidding laws. Specifically, we questioned MassHighway's authority to circumvent M.G.L. c.30, §39M when it purchased, on a sole source basis, $5.5 million in Inverset Technology.

In a memorandum subsequently provided to this Office, your staff justified the sole source negotiated procurement by citing three sources of authority: (i) M.G.L. c.30, §39M(b), pertaining to materials specifications; (ii) a statute on federal-aid for State highways (M.G.L. c. 81, §30); and (iii) federal preemption. We find no authority in these statutes or in the doctrine of federal preemption that permits MassHighway to circumvent State bidding law.

- **M.G.L. c.30, §39M(b)** authorizes use of proprietary specifications under limited and compelling circumstances when a contract is advertised. Chapter 30, §39M does not permit dispensing with advertised competition in any circumstances except an extreme emergency when it is necessary "to preserve the health and safety of persons or property[.]"

  MassHighway's interpretation misconstrues the plain meaning of the public bidding law and its action contravenes the public policy goals of the statute. In discussing the public interest objectives of M.G.L. c.30, §39M, the Massachusetts Appeals Court recently stated:

  > Read in conjunction with G.L. c.149, §§44-44M, the legislative goals of §39M are two-fold. First, to create an open and honest competition with all bidders on an equal footing. *Interstate Engr.*

> *Corp. v. Fitchburg*, 367 Mass. 751, 758 (1975). . . .Second, §39M enables the public contracting authority to obtain the lowest eligible bidder. *Interstate Engr. Corp. v. Fitchburg*, supra at 757.

Petricca Construction Co. v. Commonwealth, 37 Mass. App. Ct. 392, 396 (1994).

- **M.G.L. c. 81, §30** states that MassHighway "may make all contracts . . . and do all other things necessary to co-operate with the United States." This provision authorizes MassHighway to take actions; it does not direct action, and it does not exempt MassHighway from complying with State bidding laws.

- **Federal preemption** is invoked where there is a finding of express or implied congressional intent to preempt State law.[1] Federal-aid highway law is based on state and federal cooperation, not preemption. We know of no relevant federal highway cases in which federal preemption is considered. Nothing in the facts presented to this Office suggests even a remote application of federal preemption in this instance.

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[1] The Massachusetts Supreme Judicial Court has stated:

> There are several theories under which a State statute may be preempted by Federal law. Congress may expressly state that State law is preempted, see *Jones v. Rath Packing Co.*, 430 U.S. 519 (1977), or an intent to preempt the field may be inferred where the scheme of the Federal legislation is so comprehensive that it creates the inference that the Congress "left no room" for State regulation in that area, see *Rice v. Santa Fe Elevator Corp.*, 331 U.S. 218, 230 (1947). See also *California Fed. Sav. & Loan Ass'n v. Guerra*, 479 U.S. 272, 281 (1987).

Attorney General v. Harold Brown, 400 Mass. 826, 828 (1987).

The Inspector General is not questioning the use of advanced technologies, where appropriate, or that the CA/T Project offers opportunities for research and development. Indeed, we anticipate such opportunities arising often in the future. In taking advantage of them, you must comply with State law. Your approach in this instance did not.

Sincerely,

Helen Flaster

Helen Flaster, Staff Counsel
Contract Audit and Review Division

cc: William Flynn, Deputy Project Director
Anthony E. Battelle, Chief Legal Counsel
Susan Cobb, Counsel

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Massachusetts Highway Department
Central Artery/Tunnel

January 12, ~~1994~~ 1995

Ms. Helen Flaster
Staff Counsel, Contract Audit and Review Section
Office of the Inspector General
One Ashburton Place
Boston, MA 02108

Subject: ANOC/Temporary Loop Ramps: Inverset Technology Procurement (Letter of December 16, 1994)

Dear Ms. Flaster:

I disagree with the conclusions contained in your letter referenced above and stand by the authorities set forth in the legal memorandum that was attached to my letter to Wendy Haynes dated August 11, 1994.

Your analysis fails completely to address the discussion of federal law contained on page 2 of the legal memorandum I forwarded on August 11. Specifically, your rejection of the application of federal preemption to justify the use of a federal negotiated procurement process is based upon two criteria on which we did not rely. You then ignored a third recognized basis, implied "conflict" federal preemption, which is the basis upon which we did rely.

In its procurement decision, MHD adhered precisely to the federal statutory process set forth in 23 U.S.C. §112 and 23 C.F.R. §635 as applied via the direction and approval of the FHWA Division Administrator. This controlling federal law, we concluded, is not negated by state competitive bidding laws that may (or may not) otherwise be in conflict. In these circumstances, if state law as you construe it were followed, it would pose an obstacle to accomplishment and execution of federal law and conflict with it such that "compliance with both federal and state regulations is a physical impossibility." Gade v. National Solid Wastes Management Association, 112 S.Ct. 2374, 2383 (1992) (citing Florida Lime and Avocado Growers, Inc. v. Paul, 373 U.S. 132, 142-143, 83 S.Ct. 1210, 1217-1218 (1963)). See also, Michigan Canners and Freezers Association, et al. v. Agricultural Marketing and Bargaining Board, et al., 467 U.S. 461, 104 S.Ct. 2518 (1984); Capital Cities Cable, Inc., et al. v. Crisp, 467 U.S. 691, 104 S.Ct. 2694 (1984).

I further fail to understand how you are able to find comfort in singling out a small portion of the procurement of the loop ramps (namely, the Inversets) to be inappropriate a year after you had found the entire procurement to be appropriate. When the Project decided to comply with FHWA's instructions and procured the Inverset Technology by negotiation, it relied on 23 U.S.C. §112 and regulations promulgated thereunder as clearly applicable federal law. Consistent with this, M.G.L. c.81, §30, as controlling state law, authorized us to "make all contracts and agreements and do all other things necessary to co-operate with the United States...that may be required to secure federal aid..." M.G.L. c.81, §30.

I might also point out that in determining to use the innovative and superior design and cost effective technology of the Inversets, we had no option but to use a negotiated procurement because the Inversets are patented and sold only through franchised distributors at set prices. A modern highway department in this day and age must use creative solutions to solve complex problems and maintain cost and schedule efficiency if the taxpayers are to be served well. Therefore, state law should not be construed so narrowly as to become in conflict with federal law and hinder the innovative solutions that will bring our highways into the Twenty-first Century.

Your present allegation, put forth after construction of the loop ramps was concluded, that MHD has violated state public bidding laws, represents a full turn around from the implications of your prior approval and, in my estimation, serves no constructive public purpose. I also note that you made no effort to discuss your rather aggressive findings with anyone on my legal staff, as you were invited to do, prior to finalizing your conclusions.

Very truly yours,

MASSACHUSETTS HIGHWAY DEPARTMENT

Peter M. Zuk
Project Director

PMZ/AEB/ljg

AD-2.4.2
094-4104

cc: James J. Kerasiotes
William S. Flynn
Anthony E. Battelle

The Commonwealth of Massachusetts

Office of the Inspector General

One Ashburton Place, Boston, MA 02108

ROBERT A. CERASOLI
INSPECTOR GENERAL

JOHN W. McCORMACK
STATE OFFICE BUILDING
ROOM 1311
TEL 727-9140
FAX 723-3540

March 1, 1995

Peter M. Zuk, Project Director
Central Artery/Tunnel Project
One South Station; Fourth Floor
Boston, Massachusetts 02110

Dear Mr. Zuk:

Your January 12, 1995 letter concerning the ANOC/Temporary Loop Ramps misstated this Office's earlier comments and misconstrued the intent of our December 16, 1994 letter. I am now writing to clarify the record.

Your letter stated that a year ago, this Office "found the entire procurement to be appropriate." The statement is incorrect. At no point did this Office find the entire procurement appropriate. In fact, the following occurred:

> In a letter dated March 23, 1993 (copy attached), this Office wrote: *[B]ased on your . . . description and Massachusetts construction bid laws the Department would not be vulnerable to criticism from this Office for issuing an extra work order to Perini/Kiewit/Atkinson for constructing the CANA/I-93 connecting temporary loop ramps.*
>
> New facts surrounding the procurement were belatedly brought to this Office's attention. By letter dated April 14, 1994, you provided new information, including material related to MassHighway's decision to procure the Inverset Technology, and asked if the new information affected this Office's earlier comment. In a letter dated August 10, 1994 (copy attached), this Office responded: *The new information you provided does not change this Office's March 23, 1993 opinion regarding the narrow question you posed concerning the extra work order.* ***Nevertheless, the new information does raise other issues, . . . [including] under what authority the Department purchased, on a sole source basis, $5.5 million in Inverset Technology.*** [Emphasis added.]

This Office's subsequent letter (December 16, 1994), advised you that MassHighway had violated public works bidding law by undertaking the multi-million dollar Inverset procurement without public advertising. As the Inspector General's staff has done on several occasions in the past, the purpose of that letter was to alert you to the requirements of public bidding law to assist you in complying with the law in future procurements.

The Inspector General's legal staff has concluded that MassHighway could be subject to a legal challenge. Your legal staff disagrees with this Office's interpretation of the law. At this juncture, I believe it would be appropriate for the Project's legal staff and staff of this Office, including Janet Werkman, First Assistant Inspector General for Legal Affairs, and Helen Flaster, Staff Counsel and this Office's project leader on this matter, to meet to discuss the legal issues.

I invite your staff to contact Helen Flaster to arrange a mutually convenient time to meet. Please feel free to contact me directly if you have questions concerning this letter or if we may be of further assistance.

Sincerely,

Wendy Hayne
Deputy Inspector General for
Contract Audit and Review

Enclosures

cc: James J. Kerasiotes, Secretary of Transportation (without enclosures)
William Flynn, Deputy Project Director (with enclosures)
Anthony E. Battelle, Project Chief Legal Counsel (with enclosures)

Massachusetts Highway Department
Central Artery/Tunnel

RECEIVED

MAR 21 1995

OFFICE OF
INSPECTOR GENERAL

March 16, 1995

Wendy Haynes
Deputy Inspector General for
Contract Audit and Review
Office of the Inspector General
One Ashburton Place
Boston, MA 02108

Subject: ANOC/Temporary Loop Ramps: Inverset Technology Procurement (Letter of March 1, 1995)

Dear Ms. Haynes:

I am writing in response to your letter dated March 1, 1995 concerning the Project's procurement of Inverset Technology for the ANOC/Temporary Loop Ramps. With all due respect to your observations, the Project continues to believe that it is on sound legal ground with respect to the Inverset procurement.

In light of the fact that construction and opening of the Temporary Loop Ramps have occurred, I do not believe it would be productive to devote more resources to this matter, because there is nothing further of a practical nature that can be accomplished.

We are most respectful of your viewpoint and will continue to assess procurement issues with utmost care.

Sincerely,

Peter M. Zuk
Project Director

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095-857

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SECTION TWO

Technical Assistance Review of a Request for Proposals (RFP) for Management Consulting Services

Assistance Requested: February 18, 1993

Assistance Letters: March 1, 1993, May 6, 1993, August 4, 1993

Project Responses: July 26, 1993

Note: The Project requested that this Office review a Request for Proposals (RFP) for management consulting services and provide assistance in developing selection criteria for the evaluation process. The Project planned to use a consultant to evaluate the effectiveness of its contract with Bechtel/Parsons Brinckerhoff. This Office responded with comments by letters, dated March 1, 1993, May 6,1993, and August 4, 1993.

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Massachusetts Highway Department
Central Artery/Tunnel

February 18, 1993

Mr. Robert A. Cerasoli
Inspector General
Commonwealth of Massachusetts
One Ashburton Place
Boston, Ma 02108

Dear Inspector General Cerasoli:

The Massachusetts Highway Department (MHD) intends to competitively procure the services of qualified and independent third party to evaluate the effectiveness of its current contractual and organizational arrangement with its design/construction management consulltant, the joint venture of Bechtel/Parsons Brinckerhoff (B/PB). In the past, your Office has expressed a willingness to assist in the development of plans which will examine the Department's business relationship with B/PB.

The purpose of this letter is to request the technical assistance of the Office of Inspector General (OIG) consistent with the terms and conditions of the Interdepartmental Services Agreement between the Department and your Office. First, I am asking the OIG to assess the completeness and appropriateness of the attached draft RFP to solicit proposals from qualified firms experienced in conducting program/management reviews. We propose to advertise in the state's Good and Services Bulletin, local newspapers, and appropriate professional journals and publications as soon as possible. Subsequently, we would appreciate your assistance in this area to be completed no later than Friday, February 26, 1993.

Second, I am also asking for the OIG's assistance in developing the selection criteria and process whereby firms which respond can be properly evaluated. Moreover, I would welcome the participation of an OIG representative as a member of the selection committee. Questions regarding subsequent timelines as a result of the proposed advertising schedule or other pertinent details and constraints associated with this assistance could be worked out between our mutual staff. My point of contact for this overall request is Ron Grenier, Director of Administration & Controls.

Mr. Robert A. Cerasoli
Page 2

I believe the OIG's willingness to provide this type of technical assistance will strengthen the Department's capacity to increase the effectiveness of its design/constrcution management consultant.

Sincerely,

Pete M. Zuk
Project Director

AD-2.4.2
#093-640

cc: James J. Kerasiotes, Secretary, EOTC
Laurinda T. Bedingfield, Commissioner, MHD
William F. Flynn, Deputy Project Director, CA/T
Ron Grenier, Director of Administration & Controls, CA/T

The Commonwealth of Massachusetts
Office of the Inspector General
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ROBERT A. CERASOLI
INSPECTOR GENERAL

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March 1, 1993

Peter M. Zuk, Project Director
Central Artery/Tunnel (CA/T) Project
One South Station, Fourth Floor
Boston, MA 02110

Dear Mr. Zuk:

At your request, we have reviewed the Massachusetts Highway Department's (the Department) draft request for proposals (RFP) for an independent study of the effectiveness of the current relationship between the Department and CA/T design/management consultant Bechtel/Parsons Brinckerhoff (B/PB). This letter responds to the first part of your three-part request for technical assistance under the terms of the Interdepartmental Service Agreement between this Office and the Department. As requested, we have assessed "the completeness and appropriateness" of the draft RFP. We strongly recommend that the "rules of the game" -- including the selection criteria -- be set forth in the RFP, and we look forward to providing input on these criteria, consistent with the second part of your request. This Office respectfully declines the opportunity to serve on the consultant selection committee.

We recognize the need for an examination of the Department's present contractual relationship with B/PB. As you know, the Department hired B/PB in 1985, first to plan and then to manage design and construction of the CA/T Project. Since then, the Commonwealth has entered into eleven different contracts with B/PB, totalling more than five hundred million dollars. A close look at whether this money is being spent wisely is long overdue, and will be particularly valuable to the Department as it decides whether and how to negotiate its next contract with B/PB in the fall of 1993.

Department management should have the ability to examine for itself the effectiveness of the Department's relationship with B/PB, and ideally would already know the answers to the questions posed in the draft RFP. Regrettably, the Department currently lacks the expertise and resources to conduct the meaningful review now needed, and therefore has elected to pay a third party to perform what is, in many respects, an internal management function. We urge the Department to intensify its efforts to develop the capacity to monitor its own contractual relationships.

Our comments on the draft RFP fall into two broad categories. The first concerns the adequacy of the draft as measured against basic requirements for a sound RFP for procurements in general. Our comments in the second category address the nature of the specific study you seek in this instance. The revisions this letter suggests are by no means exhaustive, but rather represent principles to be applied throughout the consultant selection process. While we have in some instances referenced the regulations of the Executive Office for Administration and Finance, we have not assessed whether the draft RFP fully complies with them.

I. ADEQUACY OF THE DRAFT RFP GENERALLY

A well-crafted RFP will help to ensure a fair and open consultant selection process that does not fall prey to favoritism and other abuse. All RFPs should include a detailed description of the service to be purchased, minimum evaluation criteria, comparative evaluation criteria, explanation of the consideration to be given to proposal price, contract terms and conditions, and standard forms.

- **Scope of services should detail the methods to be used in conducting the study.**

The scope of services should contain more information regarding the methodology of the review. For instance, the draft RFP is silent as to whether the selected firm will be expected to develop and administer an organization-wide survey instrument using scientific methodology, or whether a judgmental sampling of face-to-face interviews will be sufficient. The Department should determine the level of reliability or validity it requires in the study. The RFP should specify other study parameters, as well. Should the consultant limit its study to a certain time frame, or should the study span the life of the CA/T Project thus far? Does the Department require an organizational development emphasis, or a balance of legal, audit, and organizational diagnostic experience? By clarifying its needs, the Department will develop a better basis for determining what qualifications and experience a firm must have in order to compete for the work. Specifics such as these will also inform potential proposers of the depth, breadth and complexity of the review the Department requires, and will guard against the submission of clearly inappropriate proposals from firms lacking the staff or skills to perform the review.

Massachusetts courts have criticized open-ended RFP's. Awarding authorities must define their needs with as much specificity as possible so that vendors offer services and prices on a clearly defined -- and level -- playing field. A more comprehensive articulation of the methodology of the review to be commissioned will help ensure a fair selection process and protect the ultimate selection from challenge.

- **Scope of services should expand upon the nature of the report to be delivered at the conclusion of the study.**

The scope of services in the draft RFP defines the deliverable only as "program management/organizational reviews and . . . recommendations for improvement" in a list of described areas. Later, the "schedule" portion of the RFP states that a "final report" from the selected consultant must be submitted within four months of the date of the notice to proceed. The scope of services should be as clear as possible about what kind of report is to be delivered. A "final report" could consist of a five-page opinion letter, or a lengthy, documented exposition. Does the Department require a finding and recommendation on every issue raised in the scope of services? Should the report include a description of the study scope and the evaluation methodology? If so, the RFP scope of services should state these requirements unequivocally. The Department must ensure through a comprehensive description of the services it seeks that the money spent on the study in fact secures a useful product. This requirement is in no way intended to suggest that the description of the final report should predetermine its conclusions.

- **The RFP should include minimum and comparative evaluation criteria.**

We recommend that the RFP contain minimum and comparative evaluation criteria, as explained below. The draft RFP this Office received makes no provision for such criteria, stating only, "[f]irms will be evaluated based on the above information as well as the project methodology delineated in the proposal."[1] We would be happy to assist by reviewing the evaluation criteria you develop, but to do so in advance of a solid scope of services would be premature.

Minimum Evaluation Criteria

Minimum evaluation criteria are "yes or no standards" used to evaluate whether a proposal is "responsive," that is, whether it contains all of the forms and information and all of the services requested in the RFP. Minimum evaluation criteria are also used to determine whether a proposer is "responsible," or has the capability, integrity, and reliability to perform under the contract. If the proposer meets each clearly defined minimum criterion, the proposal remains under consideration, and is evaluated according to the comparative evaluation criteria. If the proposer fails to meet each minimum criterion, the proposal should be rejected.

Minimum evaluation criteria cover two main issues: consultant qualification requirements (the "responsible" component) and submission requirements (the "responsive" component). To determine whether consultants submitting proposals meet the qualifications required by the minimum evaluation criteria, the awarding authority must first define in its RFP the expertise and experience it deems necessary to provide the product or services specified in the RFP. This has not been done in the Department's draft RFP. The "submission requirements" section of the minimum evaluation criteria tests whether consultants submitting proposals have provided all of the information required by the RFP. The items listed in the draft RFP under the heading "Submission Requirements" are examples of effective "submission requirement" minimum evaluation criteria.

---

[1] Although this Office has taken the position that the Administration and Finance regulations governing the procurement of service contracts do not go far enough toward ensuring a fair and open selection process, I note that even this minimal standard demands that the RFP at least give "the minimum technical specifications, and business or other qualifications" required for proposers. 801 CMR 20.05(2)(b)3. The draft RFP does not comply with these regulations, which must be satisfied unless they are specifically waived. The regulations further require that:

> [t]he selection committee . . . develop and file written evaluation criteria with the Department Head prior to the deadline date for the submission of Proposals. The written evaluation criteria shall include the weight, percentage or point scale given to each of the evaluation criteria in order to assist the selection committee in ranking the qualifications and price information submitted in the Proposals.

801 CMR 20.05(2)(d). Notwithstanding the time frame set by the regulations for the formulation of selection criteria, we recommend that the criteria be incorporated in the RFP to give consultants advance knowledge of the bases on which their proposals will be judged.

Comparative Evaluation Criteria

Comparative evaluation criteria reflect those standards or attributes for which an awarding authority would be willing to spend more money. Comparative evaluation criteria should be specific and closely tied to the tasks contained in the scope of services. The RFP scope of services, when fully detailed, will provide the requisite basis for developing both the minimum and comparative evaluation criteria.

- **The RFP should explain the significance of price proposals in the selection process.**

Price should be a factor in the selection of a consultant to perform the independent study contemplated, and the RFP should set forth the way in which price will be considered. The RFP should therefore direct proposers to submit a total dollar amount for their products. The RFP must additionally explain to consultants how their price proposals should be formulated, so that their proposals may be compared for cost on a level field.

- **Proposals should be submitted in separate, sealed parts to distinguish price from consultant qualifications and the technical proposal.**

Consultant price proposals should be kept separate from the portions of the submissions outlining consultant qualifications and the technical proposals. The Project has employed a two-step evaluation process by which architects and engineers submit their proposals in two separate, sealed packages, consisting of: 1) the consultant qualifications, which demonstrate whether a consultant meets the "responsible" component of the minimum evaluation criteria, and 2) the technical proposal itself, to which the "responsive" minimum evaluation criteria and the comparative evaluation criteria are applied. Requiring the proposals to be submitted in this way ensures that unqualified firms are rejected in the first step of the evaluation process. An alternative method would be to allow proposers to submit their qualifications and technical proposals in one package, as the technical proposal must be considered in determining whether the "responsive" segment of the minimum evaluation criteria has been met. In either case, price proposals should be submitted separately from qualifications statements and technical proposals.

- **Submission requirements do not set forth the expected format or length of proposals.**

The RFP should provide explicit instructions to proposers concerning the length and format of the proposals. Proposals submitted in a similar manner, according to a standard format, will be easier to compare and evaluate on objective bases. In fact, even the Administration and Finance regulations require RFPs for service contracts to include "instructions and information concerning the format of the Proposal and submission requirements." 801 CMR 20.05(2)(b)6.

There is another benefit to imposing format requirements in the RFP: they help eliminate submissions which are little more than public relations pieces or sales brochures. The proposals should constitute a substantive effort on the part of each firm to demonstrate that firm's ability to provide the services described in the scope of the RFP.

- **The RFP should contain terms, conditions, and any special provisions the Department intends to include in this contract, as well as standard forms.**

I have enclosed a copy of the Administration and Finance Standard Service Contract, which we suggest be appended to the RFP. Absent a waiver from the Comptroller's Office, the regulations of the Executive Office for Administration and Finance require the use of the standard contract in procurements of this nature. 801 CMR 20.07(1)(a).

We suggest that the Department prohibit unapproved changes in key project personnel named in the proposals, and that this prohibition be identified as a "special term" in the RFP.

- **Consultants submitting proposals should be required to submit a disclosure statement setting forth any other income derived by the proposed consultant from the Commonwealth or any of its political subdivisions, as well as a statement setting forth the names and addresses of all persons with any interest in the contract, as described in M.G.L. c. 29, §29A and 801 CMR 20.07(2)(d).**

- **Consultants submitting proposals should also be required to submit a disclosure statement setting forth any income derived by any persons with any interest in the contract from Bechtel Corporation or Parsons, Brinckerhoff, Quade & Douglas, Inc., or any of their affiliated companies or related entities.**

- **Consultants submitting proposals should be instructed to submit a statement of tax compliance.**

M.G.L. c. 62C, §49A and 801 CMR 20.07(2)(f) require parties providing the Commonwealth with certain goods or services, including management consultant services, to submit a written certification of compliance with all laws of the Commonwealth relating to taxes. Requiring this statement as part of the proposal will provide the consultant selection committee with more complete information from the start.

II. CRITIQUE OF THE SUBSTANCE OF THE STUDY DESCRIBED IN THE RFP

The study outlined in the RFP should examine fully the unique relationship between the Department and B/PB to determine whether this relationship benefits the Commonwealth. Part of the answer to this question lies in the efficiency and qualifications of the Department and B/PB organization and staff, and the draft RFP covers this area well. However, it is important that the study not just determine how the existing relationship between the Department and B/PB can be made more efficacious, but equally conclude whether the Department should 1) continue to entrust the management of this large, complex and expensive project to a private firm, and 2) entrust the Project to the particular joint venture selected over seven years ago. As written, the draft RFP simply does not address these larger policy questions. In a 1991 letter to the Executive Office of Transportation and Construction, this Office criticized the 1990 Lazard Freres & Co. report as an $880,000 expenditure undertaken to support the Administration's agenda rather than test its assumptions. We caution you against making the same mistake in the upcoming review.

The issue of whether an agency's relationship with another entity, public or private, benefits the taxpayers by producing a superior product at a reasonable cost is a recurrent one. The Department must develop the capacity to monitor and manage its contractual relationships competently and cost-consciously. A qualified, independent consultant may be able to identify organizational and structural impediments to the Department's ability to "manage the manager" it hired.

- **A determination as to whether the relationship between the Department and the joint venture should continue is not a stated objective of the study.**

The independent review sought by the Department presents an ideal opportunity to study and assess the usefulness of the relationship between the Department and B/PB; we recommend that the RFP be revised accordingly.

- **An assessment of whether adequate cost control measures exist at every stage of the CA/T Project is not a stated objective of the study.**

Taken together, the objectives in the draft RFP imply that cost control is a concern to the Department. We suggest that this concern be made explicit, and be included as a separate objective in the RFP. Otherwise, the Department may inadvertently convey the impression that cost is no object on the CA/T Project. One of the primary advantages of privatization is cost-containment through periodic exposure of a procurement to the forces of the marketplace. In theory, open competition among qualified firms will drive the price of the product down. By failing to permit competition for the last ten of the eleven contracts it has entered into with B/PB, the Department has granted B/PB a monopoly on the consultant service it provides, and effectively removed the marketplace forces that could have driven down the cost of the array of management consultant services you seek. Any study that purports to examine the effectiveness of a public/private partnership must look closely at whether cost-control mechanisms are present and working properly.

- **The important objectives outlined as items (f) and (g) in the RFP introduction are not mentioned in the RFP's "scope."**

A thorough RFP "scope" section demonstrates that the Department has defined its own needs, and has thus guarded against letting the consultants set the parameters of the study. The scope in the draft RFP is a thorough discussion of many, but not all, of the objectives listed in the introduction. For instance, objectives (f) and (g), which strike at the heart of the effectiveness of the Department's relationship with B/PB, are not supported by further explanation in the scope.

Objective (f) states that the study will "review the adequacy of the Joint Venture's internal control procedures and identify any vulnerabilities which would limit the department's ability to comply with state and federal requirements." Questions addressing B/PB's internal control procedures and compliance with laws are essential to a comprehensive analysis of the current contractual relationship, and deserve elucidation in the scope.

Objective (g) specifies as a goal of the study "establishing workload measurement technique[s] to enable the department to compare work products and deliverables against milestones and personnel requested." The Department's ability to assess whether deliverables have been produced in a timely and cost-conscious manner is central to its responsibility to hold B/PB accountable for managing Project design and construction. Moreover, in the past, this Office has raised questions regarding the definition of deliverables and clarity of deadlines in the contract documents. Consequently, we view objective (g) as an important goal of the study, and suggest that the scope of the RFP be expanded to support this objective.

- **The RFP should state as an objective of the study the identification of vulnerabilities to fraud, waste and abuse generally.**

Although objective (f) directs the consultant to identify vulnerabilities on the Project that would lead to noncompliance with federal and state requirements, it does not mention the identification of vulnerabilities to fraud, waste and abuse generally. This goal should be included in the RFP. One of the issues the consultant should address in this area is segregation of duties, or the separation of Project responsibilities to reduce the opportunity for any person to perpetrate or conceal errors in the normal course of his or her duties. For example, the selected consultant might look at whether B/PB, acting as the authorized representative of the Department while negotiating modification change notices, has enough distance from the potential benefit of the modification to represent the Department's interests of keeping costs down and the Project schedule intact.

- **Objective (e) should be clarified to specify the decision-making processes and approval at issue.**

Objective (e): "documenting the decision-making process and recommending methods to facilitate the review and approval process" is ambiguous, and may convey the impression that Department review of Project decisions somehow impedes progress on the Project. Consultants submitting proposals for this study should in no way, expressly or implicitly, be directed to invent methods to minimize or bypass the Department on Project decisions. Streamlining the process without sacrificing safeguards is important. Too often, however, lack of planning, not the procedural requirements themselves, are at fault. Objective (e) should be redrafted to direct the consultant to study any specific decision-making processes within the Project's organizational structure that the Department suspects may be overly cumbersome.

Similarly, it should be made clear to consultants submitting proposals that the "scope definition" section of the RFP is not intended to direct them to find that B/PB should have more overall control of the Project.

- **Introduction defines "joint venture" incorrectly.**

The first sentence of the draft RFP states that the joint venture is "comprised of Department Personnel and a private management consultant/engineering firm." As we have come to understand it, the term "joint venture" more customarily refers to Bechtel/Parsons Brinckerhoff. To suggest, as the draft RFP does, that the Department and B/PB are a single, melded unit for business purposes is troubling. This phraseology will, at the very least, discourage firms from viewing the Department and B/PB as individual entities, with differing roles and responsibilities, and accountability to the public.

- **Scope sections dealing with structure should pose the question whether the structure and staffing of the Project afford the Department enough control to ensure that the Department, and not B/PB, truly directs the Project.**

- **Scope sections discussing staffing should include the issue of whether staffing levels in different areas of the Project have changed appropriately as the Project has advanced.**

- **Scope sections on communications should require an analysis of the Department's sources of information on the Project.**

The Department should verify the accuracy of the information it receives from Project management information systems about Project progress and B/PB's performance. The "Communications" section of the scope begins to explore this issue, but does not raise it directly. If the Department wants to assign this responsibility to the independent consultant, the RFP must describe the question clearly and comprehensively.

- **The "Legal Limitations" issue should be removed from the scope.**

By way of House 112, the Department has already filed at least seventeen bills this session, many of which seek exemptions to State laws pertaining to the CA/T Project. We question the appropriateness of paying a consultant to undertake what is arguably a governmental function. If the Department chooses, nonetheless, to pay a private firm for these services, care should be taken to ensure that those efforts do not duplicate work Department staff has already completed. Where it can be demonstrated that specific provisions of law impede progress on the Project, a waiver should be sought as long as such an exemption would not compromise the safeguarding function served by the statute in question.

- **The "Scope Definition" should require the consultant to analyze the contracts and scopes of work between the Department and B/PB, and propose improvements.**

In this Office's March 8, 1990 letter to former Department of Public Works Commissioner Jane Garvey, we expressed the concern that the vague and open-ended quality of the CA/T Project contracts has prevented the Department from exerting control over the Project. The independent consultant engaged to conduct the upcoming review could help resolve this problem by suggesting improvements to the contract and scope of work between the Department and B/PB. The "scope definition" section of the RFP should therefore direct the consultant to propose ways to redraft these documents. In this vein, the selected consultant could suggest contract terms that would allow the Department to hold B/PB accountable for work performed, that would provide clear sanctions for B/PB's failure to deliver, and that would establish objective standards by which the Department could measure B/PB's performance. Such suggestions would be invaluable to the Department when and if it negotiates a new contract with B/PB in the fall.

- **The "Scope Definition" should direct the consultant to evaluate the effectiveness of Department oversight activities.**

The "Scope Definition" section of the draft RFP asks which tasks contained in the scope of work should be performed by B/PB, and which by the Department. This Office has previously stated its concern that oversight or monitoring activities now performed by B/PB, such as affirmative action, value engineering, and quality assurance, might be performed to better effect by the Department. Alternatively, these functions might be contracted out to firms or agencies distinct from either the Department or B/PB. Questions regarding the significance of who performs these functions will help clarify the effectiveness of the current allocation of these tasks between the Department and B/PB.

- **The scope should instruct the consultant to examine the Department's original rationale for heavy dependence on a private firm to manage the Project.**

Do the original reasons for entering into a relationship with B/PB still make sense? Has the relationship between the Department and B/PB served the purposes for which it was intended? Based on an analysis of the evolution of B/PB's role, the consultant should recommend areas for improvement.

# # #

The question-based format you have chosen to follow in the RFP may limit the consultant to providing affirmative or negative responses to only those specific questions you have raised. Discussing or listing areas of concern to be addressed by the consultant is a less restrictive approach.

For pointers on preparing RFPs, you may want to review the enclosed copy of this Office's September 20, 1988 letter to William Twomey, in which we comment on designer selection procedures for the CA/T Project. In addition, I have enclosed CA/T Project Procedures 701(1), 701 (2.3 - 2.5), 701 (3.3), and 701 (3.4). These procedures govern the selection of architects and engineers for contract awards, and many of the steps and principles they embody apply to the selection of consultants generally. The procedures incorporate the policies of fair and open competition, documented evaluation of proposals according to appropriate and predetermined criteria, and selection of qualified candidates. Because of federal requirements -- specifically the so-called Brooks Act -- these procedures prohibit price as a consideration in ranking candidates. Fortunately, that restriction may not apply to procuring management consulting services in this instance. Obviously, those procedures which allow the participation of B/PB would be inappropriate to the consultant selection process in this case.

This Office does not know whether the issues raised have been addressed in internal audits or other internal controls reviews. A comprehensive internal controls review, for instance, would have already provided the Department with a reliable test of its management information systems. The Department should examine any relevant audits, reviews and reports so the study can be confined to areas not previously examined.

With the incorporation of the above suggestions, the RFP should provide a sound framework for achieving the dual goals of helping to ensure fairness in the selection process and obtaining a study that will strengthen the Department's ability to manage the CA/T Project. This Office looks forward to providing input on the formulation of meaningful selection criteria, once the full development of the scope of services has made that process possible.

Thank you again for the opportunity to comment on your draft RFP, and please feel free to contact me with any questions.

Sincerely,

Wendy Haynes
Chief, Contract Audit and Review Division

enclosures:

The Commonwealth of Massachusetts -- Standard Contract
CA/T Project Procedure No. 701
Letter dated September 20, 1988, from Wendy Haynes to William V. Twomey

The Commonwealth of Massachusetts
Office of the Inspector General
One Ashburton Place, Boston, MA 02108

ROBERT A. CERASOLI
INSPECTOR GENERAL

JOHN W. McCORMACK
STATE OFFICE BUILDING
ROOM 1311
TEL. 727-9140
FAX 723-3540

May 6, 1993

Peter M. Zuk, Project Director
Central Artery/ Tunnel Project
One South Station, Fourth Floor
Boston, MA 02110

Dear Mr. Zuk:

I am writing in response to your earlier request for advice on the development of evaluation criteria by which to judge proposals submitted pursuant to the Request for Proposals (RFP) issued by the Massachusetts Highway Department (the Department) on April 7, 1993. This particular RFP invited proposals for a management review of the CA/T Project's organization under the current Tenth Work Program. The analysis below first discusses the principles underlying evaluation criteria, and then examines the evaluation criteria incorporated in the RFP and in the rough draft ("Recommended Evaluation Methodology") provided to this Office via facsimile on April 23, 1993. I discussed the substance of this letter during a meeting on Tuesday, May 4, with Miriam Kelliher, of this Office, and Marie Hayman. Ms. Hayman noted during that meeting that the selection committee will not be relying on interviews during the evaluation process.

Evaluation criteria serve two general purposes in the selection process. First, evaluation criteria inform prospective proposers of the bases upon which their submissions will be judged, so that proposers may develop their proposals in the most responsive way possible. In theory, the resulting pool of submissions, and hence the actual service delivered, is of a higher quality than it otherwise would have been. You will recall that in a March 1, 1993 letter to you assessing the draft RFP, this Office strongly urged that the Department set forth the evaluation criteria in the RFP. In addition, I offered the assistance of this Office in formulating those criteria once the Department had fully developed the scope of services. In that letter, we pointed out that "the RFP scope of services, when fully detailed, will provide the requisite basis for developing both the minimum and comparative evaluation criteria."

Notwithstanding this Office's recommendations, the Department chose not to include the full version of the evaluation criteria in the RFP. Thus, the proposers do not have the benefit of knowing specifically how the selection committee will judge the proposals. As a consequence, the pool of proposals may be less responsive, and the study less useful, than they might have been. Moreover, the Department did not develop fully the RFP scope of services, which severely limits its (as well as our) ability to identify meaningful evaluation criteria at this late stage.

The second purpose of evaluation criteria is to help ensure fairness and accountability, and avoid waste and favoritism, in the award of contracts by articulating in advance the standards by which the selection committee will be making comparative judgments. By laying out the evaluation criteria from the start, the awarding authority prevents the selection committee from choosing a favored proposer and manufacturing criteria to match the selection after the fact. To this end, this Office has previously advised awarding authorities to provide clear, logical rules for evaluating competing proposals; to avoid loosely-defined criteria; to guard against inconsistencies in evaluators' approaches; to define a basis for comparison, where possible; and to instruct evaluation committees on how to judge the merits of information required by the RFP. Where, as in this case, an awarding authority plans to use a numerical scoring system, this Office has stated that the authority should provide evaluators with an indication of what it might take to get a perfect score on any criterion.

The principle of accountability will be better served if the selection committee is diligent in its documentation of the evaluation process. The committee members should thus be directed to include a written narrative with every grade delivered, explaining briefly for each criterion why the proposal deserved the rating given.

Section VI-A: Pass/Fail Check List

The RFP states that proposals which fail to meet any of the six requirements listed in this category will be rejected, while the draft states only that failure to meet any of the requirements in this section "could" lead to a rejection. The purpose behind minimum evaluation criteria is to ensure that the evaluation committee considers only those proposals which meet the minimum requirements, defined by the "pass/fail" criteria. Therefore, any proposals which fail to meet the six "pass/fail" criteria should automatically be rejected, as stipulated in the RFP. It would be fundamentally unfair for the Department now to change the rules set out in the RFP by allowing proposals which fail the "pass/fail" criteria to proceed to the second stage of the evaluation process.

Section VI-B: Respondents' Management Review Experience and Expertise

The "experience and expertise" portion of the selection criteria is of heightened importance to this evaluation process, in light of the Department's failure to develop fully a specific scope of services. The vague language used in the RFP to describe the parameters of the study impairs the selection committee's ability to compare the proposals on the basis of how well they respond to, and match, the service requested. With its hands thus tied in the area of evaluating the proposed studies on the basis of responsiveness, the committee is left with only one factor to scrutinize in any logical, comparative way: the proposers' experience and qualifications. It is critical, then, that the selection committee members predetermine the experience and background they judge to be essential to conduct the study the Department seeks.

The direction to the committee members, in the draft criteria, to assign points according to the success of proposers' past projects, seems sound. The decision to assign greater weight to past government reviews than to past business reviews also makes sense. However, the evaluation process in this category would be enhanced if "quality" and "timeliness" were separated into two subcategories in this section, with a separate maximum allowable score for each. Perhaps "similarity of past project to study envisioned by the Department" should constitute a third category, although the vagueness of the RFP scope of services will make this item difficult to judge.

In addition, rather than suggesting to the committee that "it would be beneficial if those projects involved public projects such as FHWA projects and highway projects [23 CFR]," the selection criteria should specify how many additional points a past project warrants for having involved the FHWA, 23 CFR, or a highway. More importantly, this factor is given more weight in the RFP than in the draft criteria. As I stated above, it would be fundamentally unfair for the Department to change the rules of the evaluation process in midstream by assigning lesser importance than the RFP indicated to experience on FHWA, 23 CFR, or highway projects.

Section VI-C: Key Personnel Experience

The Department must decide precisely what qualifications and background the selection committee should value as it compares the personnel of one firm against the personnel of another. As yet, the selection criteria in the RFP and the Department's draft are silent on this issue. The selection committee must know how many points to assign for what kinds of education and experience for each proposer's "engagement partner," "project manager" and "anticipated other staff." The absence of such specific criteria and instructions increases vulnerability to arbitrariness, which in turn increases the likelihood that the award will be challenged as unfair or capricious. If the Department cannot point to specific, bona fide reasons for having valued one project team over another, it courts accusations of favoritism and abuse.

The draft proposes that the engagement partner be awarded a maximum of five points; the project manager, twenty points; and staff, five points. As we discussed with Ms. Hayman, we recommend that this section be given the heaviest weighting, and that more points be allotted to project staff than the draft criteria currently allow. The effectiveness of the project manager will largely determine the success of the study, particularly given the short time-frame in which the study is to be completed. However, the selection committee should also examine closely the qualifications and experience of the project staff who will be performing the bulk of the work on the project. This study should not be used as a training vehicle for the successful proposer's inexperienced staff. An adjusted point scheme giving project staff more weight will help prevent the Department from hiring a team with little experience.

The term "engagement partner" should be defined for the selection committee members. What should the committee members do if a firm's engagement partner is the same person as the project manager? What if a proposer has no "engagement partner?" Does the proposal automatically lose five points? The selection criteria should address these issues to help the selection committee members rate the proposers in a consistent and meaningful manner.

Section VI-D: Respondent's Methodology and Resources

This section of the selection criteria is divided into three subsections: a) proposed methodology including innovativeness in developing performance measurement techniques; b) ability to complete on time and cost effectively given current workload; and c) resources available to proposer (in terms of overall organization and its management services section).

a) *Proposed methodology* -- Other than on the basis of general feasibility, I cannot imagine how the selection committee will compare one proposal's methodology against another. Presumably, if the Department had an idea as to what methodology would be most effective for the proposed study, it would have described this methodology in the RFP, as we suggested in our March 1, 1993 letter. If the Department does not know what methodology it wants, the selection committee cannot be expected to know either. If the Department has, since the issuance of the RFP, educated itself as to the relative advantages and disadvantages of various methodologies, it should provide the selection committee with the benefits of that analysis. Otherwise, the committee members should be directed to evaluate competing methodologies simply on the basis of their apparent feasibility.

Further, I do not understand how the "innovativeness" of a performance measurement technique is relevant to its success, nor do I understand the meaning of the phrase "innovativeness in developing performance measurement techniques." Unfortunately, the Department included this factor in the RFP, so it cannot at this point be deleted. However, I suggest that this criterion be accorded the least weight possible.

b) *Ability to complete on time and cost effectively given current workload* -- Because time is of the essence on this project, ability to complete the review on schedule is an important item. Accordingly, you should consider weighting this factor most heavily in this section. The most useful information in this category will come from the reference checks, which should be well documented and accurately demonstrate that persons listed as references were asked the same questions.

c) *Information regarding the respondents' overall office staffing, including management services staffing* -- This category is largely irrelevant in light of the selection committee's analyses of each proposed team's qualifications and ability to complete the project on time. Both of the categories are mandated elsewhere in the RFP. Is a large firm necessarily better than a small or medium-sized firm? Is it better for the purposes of this study to have a high partner-manager ratio? What number of employees with what level of experience would earn a proposer a high mark in this category? At the very least, the selection committee must be told which staffing profiles are deserving of a high score, and which warrant a low rating. This criterion merits a low weight, since it is only marginally useful to the committee in selecting the best firm to do the work.

As we discussed with Ms. Hayman, one method of handling a numerical scoring system is to direct the selection committee members to judge each category by assigning to that category one of four grades, such as "highly advantageous," "advantageous," "not advantageous," and "unacceptable." Under this kind of a system, the adjectives are each worth a predetermined numerical score, and the total scores are computed after the adjectival grading has been completed. The adjectival method concentrates the rater's attention on a judgement rather than an arbitrary assignment of numbers.

Please do not hesitate to contact me with any questions regarding this letter, or if we may be of further assistance.

Sincerely,

Wendy Haynes

Wendy Haynes
Chief, Contract Audit and Review Division

cc: Ron Grenier
Marie Hayman

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Massachusetts Highway Department
Central Artery/Tunnel

RECEIVED

JUL 28 1993

OFFICE OF
INSPECTOR GENERAL

July 26, 1993

Ms. Wendy Haynes
Chief, Contract Audit and Review Division
Office of the Inspector General
One Ashburton Place, Room 1311
Boston, MA 02108

Dear Ms. Haynes:

I am writing to formally transmit to your Office, the Project's revised Request For Proposal (RFP) for Management Review Services. I understand that a draft of the scope of services was forwarded to you nearly two weeks ago.

In reviewing the revised RFP, you will note that it retains the original RFP's primary focus on organizational effectiveness. However, it also expands the original scope to include the areas of internal and management controls. These areas were incorporated into the revision at the suggestion of your office. The revised RFP also changes the original RFP's study duration from six to nine months.

The conflict of interest section contained in the original RFP also has been revised; the new version appears on pages 9 and 10. Moreover, the Department is currently in the process of conducting an independent estimate to establish the maximum contract dollar value for the revised RFP. You will be made aware of this figure once it is established.

Since we hope to begin advertising this RFP by mid-August, I would hope that your office could review the RFP and provide comments to us no later than August 4. I understand that my staff has already contacted you to schedule a mutually agreeable time to meet and discuss any suggestions you may have regarding the revised RFP.

Sincerely,

Peter M. Zuk
CA/T Project Director

attachment

cc: William Flynn, Deputy Project Director
Ron Grenier, Director of Administration and Controls
Marie Hayman, Contract Administration Manager

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The Commonwealth of Massachusetts
Office of the Inspector General
One Ashburton Place, Boston, MA 02108

ROBERT A. CERASOLI
INSPECTOR GENERAL

JOHN W. MCCORMACK
STATE OFFICE BUILDING
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TEL: 727-9140
FAX: 723-3540

August 4, 1993

Peter M. Zuk, Project Director
Central Artery/ Tunnel Project
One South Station, Fourth Floor
Boston, MA 02110

Dear Mr. Zuk:

I am writing in response to your letter, dated July 26, 1993, in which you requested this Office's review of the revised request for proposals (RFP) for so-called management review services on the Central Artery/Tunnel (CA/T) Project. The revised RFP is a substantial improvement over the draft submitted to this Office for review on February 18, 1993. As you correctly noted, the revised RFP addresses a number of the concerns this Office expressed by way of letters dated March [illegible], 1993 and May 6, 1993.

In order to accommodate the Department's desire to re-advertise for these services by mid-August, we met with CA/T staff on July 28 to critique the revised draft. I have enclosed with this letter a summary of the areas which still merit attention. Most of these issues were addressed at greater length during our meeting last week. Please note that the enclosed summary includes language to strengthen the conflict of interest statement in the RFP.

Do not hesitate to contact me with any questions regarding this letter, or if we may be of further assistance.

Sincerely,

Wendy Haynes, Deputy Inspector General
for Contract Audit and Review

Enclosure

cc: Ron Grenier
Marie Hayman

SUMMARY OF COMMENTS AND RECOMMENDATIONS
RFP DATED 7/26/93 FOR "Management Review Consultants"

NOTE: For your convenience, our remarks are clustered by page number from the RFP. Several general recommendations follow the specific remarks. Because these issues were discussed at some length with CA/T staff, we have not included the detailed rationale for these suggestions, nor have we included the Department's comments.

Page 1:

I-C - "estimated dollar amount" implies that the contract will not have a maximum/not to exceed amount. This should be clarified here and in the contract.

Page 2:

-The Department should define [illegible] itself, if not in the RFP, what is meant by "non-material irregularities." It is important to justify in writing your reasons for granting any waiver to the requirements listed in the RFP.

-Why give proposers the option of posing questions orally? Delete the word "preferably."

Page 3:

I-E - The Department's requirements for the project manager and background experience should be more specific. State in the RFP the specific criteria you will use to judge whether the proposed staff have the knowledge and experience you require.

-The paragraph following (4.) is not necessary if the Department plans to base payment to the consultant on results and deliverables rather than the number of hours the consultant charges to the contract.

I-F - Delete "oral" in the last paragraph. Only written amendments to a proposal should be entertained.

Page 4:

I-G - The scope of services should be fully described in the RFP. The pre-proposal meeting should not be used to change, alter or modify what was advertised.

I-H (Step 1) - Add at the end of the last sentence, "to the requirements listed in this RFP." Document the reasons for disqualifying any proposal.

(Step 2) - The RFP now states "[t]his evaluation will emphasize. . . . " What else will the evaluation "emphasize"? Either state what those items are, or rephrase the statement to say that the evaluation will "be based solely on . . . ."

(last line) - The word "may" is too tenuous. Replace in both instances with "will" or "shall."

Page 5:

(Step 3) - End last sentence after "VI." Respondents without "appropriate experience and qualifications" should be disqualified and, thus, excluded from the ranking exercise.

Page 6:

II-B - The Department should consider lump sum payments for deliverables rather than tying only the fee to delivery of the work products.

(last paragraph) - The Department should reserve the right to waive or change the due dates at its own behest.

Page 7:

II-C (first paragraph) - While we recommend greater specificity on the methodology, we acknowledge that there are good arguments on both sides.

(third paragraph) - The Department is leaving the door open for contract add-ons. Every effort should be made to anticipate the tasks and include them in the scope of services.

II-F - The term "single Project Manager" is ambiguous. The RFP should state explicitly that the project manager named in the firm's proposal must be assigned to the study. The same should apply to the individuals the firm touts as its team.

Page 8:

II-F (cont) - The term "management experience" should be defined. If the Department requires that each staff member have at least five years of [well-defined] management experience, that requirement should be added to the Pass/Fail Check List (VI-A).

II-G - The reporting requirements should be defined ahead of time. To wait until after the contract is signed could cause unnecessary delays.

Page 9:

II-I - The invoicing procedures should already be known and included in the contract.

II-K - The conflict of interest language should be amended to preclude from consideration any firm which is *presently* working on the Project. In most cases, B/PB oversees the work of design consultants and contractors, and plays a key role in determining contract award and change orders. The potential for a conflict is obvious. We suggest that the language be amended as shown on attachment A to this summary.

Page 11:

- The RFP is unclear as to the scope of the consultant's work with respect to work program 10 and 12. Furthermore, it is unclear whether the relevant work programs will be available to the proposers as they prepare their responses to the RFP. By clarifying the scope and wo. program issues, you will remove some of the ambiguity from such terms as "the Joint Venture management structure", "current . . . staff profiles" and related issues.

Page 12:

- It is unclear how analyzing B/PB's decisionmaking process, including the home/regional/project office relationships, will assist the Department in judging B/PB's performance on the Project. In our view, the emphasis should be on analyzing the Department's decisionmaking process for managing the Project, and managing the manager (i.e., B/PB) it hired.

Page 14:

- (organization) - Better define "organizational structure" to ensure that the consultant examines staff qualifications and experience.

Page 15:

- (top of page) - The underlined comment is important and should be incorporated in the general statement of objectives (e.g., p. 11). All reports submitted to the Department by the consultant, whether in final or draft form, should address the items described on pages 15 and 16.

- The consultant should support its conclusions and recommendations with specific examples of problems created by various impediments to accountability.

Page 17:

- It is unclear whether the NTPs will be sequential. Does the Department anticipate overlap in the schedules? The decision in this regard will impact the cost proposals and staffing plans for the proposers.

- The RFP, perhaps by way of the contract, should state how payments will be tied to satisfactory production of the deliverables.

Page 18:

- It is unclear whether the Department requires the consultant to have a Boston office.

Page 19:

- The Department should state specifically its requirements in the RFP. For instance, will the Department consider a firm which has no experience in conducting management reviews of public sector agencies? If the answer is no, the "pass/fail" criteria should weed those firms out. Will the selection committee award more points to firms with experience on complex public works projects? Again, the RFP should describe explicitly the criteria by which the Department will judge the proposals.

IV-C - The Department should require that the winning firm provide the same personnel the firm described in its efforts to "sell" its proposal during the competition. The Department should retain full control over any replacements or substitutions.

Page 20:

V-B - Define "reasonable time" with respect to fee negotiations.

Page 22:

VI-C - Require that proposers submit products produced by the project manager and staff they offer for this job which demonstrate their ability to do this work. State explicitly that the team profile must demonstrate expertise in each subcategory of the Scope of Services.

VI-D - How will the selection committee judge this area? What will convince the selection committee of a firm's ability to deliver a product within budget and on time?

GENERAL COMMENTS:

1. The RFP appears to exclude B/PB's subconsultants from the management review. Some subconsultants, such as WFA and PMA, serve in management or supervisory capacities on the Project organization. These roles may not always be formalized on the organization chart, but they do exist. In the same vein, the consultant should be alert to the implications of so-called "secunded" positions, particularly where the individuals have management and/or oversight responsibilities. The Scope of Services and definitions section should include such positions.

2. The RFP should emphasize that accountability is the underlying theme of the management review.

3. The Department must document each step of the selection and negotiation process.

Attachment A

II-K CONFLICT OF INTEREST

The Management Review Consultant will be responsible for identifying and reporting in writing all potential cases of conflict of interest to the Department, including those involving its subcontractors, in performing services under the contract or a specific project assignment. A Management Review Consultant must avoid actual or apparent conflicts of interest in its services to the Department.

In order to avoid any actual or apparent conflicts of interest in the performance of services to the Department in connection with the management review project, the Department will not accept proposals from any respondents that are currently ~~performing services~~ engaged in any business transactions with the CA/T project, or are currently engaged in any business transactions with, ~~for~~ or are in a joint venture with, Bechtel Corporation or any of its subsidiaries or affiliates, Parsons Brinckerhoff Quade & Douglas, Inc. or any of its subsidiaries or affiliates, or the joint venture of Bechtel/Parsons Brinckerhoff. ~~in connection with the Central Artery/Tunnel Project.~~ Any respondent that has a conflict of interest as described above is disqualified from responding to this solicitation, and any proposals filed by such respondents will not be considered.

Respondents must disclose in their written proposals the nature, the duration, and the dollar value of any of the following business transactions undertaken ~~services performed~~ within the past five years:.

(1) ~~services for,~~ business transactions with, or a joint venture with, Bechtel Corporation or any of its subsidiaries or affiliates, Parsons Brinckerhoff Quade & Douglas, Inc. or any of its subsidiaries or affiliates, or the joint venture of Bechtel/Parsons Brinckerhoff ~~in connection with the Central Artery/Tunnel Project~~, or

(2) ~~services for, or a joint venture with, Bechtel/Parsons Brinckerhoff in connection with~~ business transactions with the Central Artery/Tunnel Project.

Such disclosure will be evaluated by the Department's Selection Committee to ensure that there is no actual or potential conflict of interest that would impair the respondent's ability to make an independent assessment.

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SECTION THREE

Technical Assistance Review of the Planned Alternative Dispute Resolution Process

Assistance Requested:	March 31, 1993
Assistance Letters:	May 18, 1993
Project Responses:	August 25, 1993

Note: The Project requested that this Office comment on the draft provisions of the alternative dispute resolution process. The Project developed these provisions to resolve construction disputes before they reach litigation. The Project concluded that an alternative resolution process remained more cost effective than the litigation process. This Office commented by letter, dated May 18, 1993.

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Massachusetts Highway Department
Central Artery/Tunnel

RECEIVED
APR 5 1993
OFFICE OF
INSPECTOR GENERAL

March 31, 1993

Inspector General Robert A. Cerasoli
Office of the Inspector General
Room 1311
One Ashburton Place
Boston, MA 02108

RE: Proposed Central Artery/Tunnel Project Alternative Dispute Resolution Process

Dear Inspector General Cerasoli:

The Central Artery/Tunnel Project is likely to generate a large number of construction claims, disputes, and litigation, because of its nature, size, and duration. For this reason, over the past several months my legal staff and the Project's Management Consultant, Bechtel/Parsons Brinckerhoff, have undertaken to develop an alternate disputes resolution ("ADR") process of particular suitability for this Project, with the objective to resolve Project-related construction disputes before they reach the burdensome litigation stage.

We have concluded that a comprehensive ADR process interposed at the Project level and before the standard litigation process is engaged is, without question, the most cost effective and expeditious way to resolve such disputes. To the extent that such a program is successful, it will avoid the cost, delay and inconvenience to Project personnel that undoubtedly will result if all disputes must go initially and directly into the conventional litigation process.

The Project's legal staff has developed provisions intended for inclusion in the Project's construction contracts that would implement a comprehensive ADR process. Attached to this letter is an Executive Summary describing the key elements of the Project ADR program, together with a set of the proposed contractual provisions necessary to implement the program.

We believe that implementation of a "state of the art" ADR program will assist the Project in staying on schedule and within budget and ultimately will save the Commonwealth the very substantial delay and expense that would otherwise be incurred.

One South Station • Boston • Massachusetts • 02110 • Phone 617-951-6000 • Fax 617-951-0897

We welcome your input on this ADR program, particularly in light of the recently executed Interagency Agreement. Because construction on the Project is well under way, we would like to implement this program as soon as possible. Therefore, I request that you submit your comments in writing to Chief Legal Counsel Anthony E. Battelle by April 20, 1993, if possible.

Thank you for your assistance in this very important matter.

Sincerely,

Peter M. Zuk
Project Director

PMZ/KLD/yn

Enclosure

cc: Anthony E. Battelle, Chief Legal Counsel
William Flynn, Deputy Project Director
Ronald Grenier, Director of Administration and Controls

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093-1220

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The Commonwealth of Massachusetts
Office of the Inspector General
One Ashburton Place, Boston, MA 02108

ROBERT A. CERASOLI
INSPECTOR GENERAL

JOHN W. MCCORMACK
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May 18, 1993

Peter M. Zuk, Director
Central Artery/Tunnel Project
One South Station; Fourth Floor
Boston, Massachusetts 02110

Dear Mr. Zuk:

This letter responds to your request, dated March 31, 1993, for technical assistance from this Office concerning the proposed Alternative Dispute Resolution (ADR) Program for the Central Artery/Tunnel (CA/T) Project. Our comments and recommendations are based on our review of a draft of so-called Special Provision 7.16 which accompanied your letter, as well as information provided by your staff during a meeting with this Office on April 24, 1993 and in subsequent telephone conversations.

As we understand it, the Department's proposed ADR program will pertain to about fifty CA/T construction contracts estimated at a combined worth of approximately $4 billion. While the Department has concluded that the ADR program is a cost-effective approach to reducing or eliminating litigation over construction contract disputes, the Department was unable to provide data to support its conclusion. The Department believes the proposed ADR program will save millions of dollars in costs associated with litigation. This Office is concerned, however, that the estimated savings are not based on actual experience on other projects.

According to CA/T staff, the proposed ADR program development has been underway for at least a year. After incorporating suggestions solicited from a number of entities, including this Office, the Department plans to implement for all new construction contracts over $10 million, a refined version of the proposed ADR program we reviewed.

We believe that the Department's efforts to create a sound ADR program will be substantially improved with the following actions:

1. Evaluate the cost-effectiveness of the ADR program on an annual basis to determine whether it is achieving the objectives envisioned by the Department and to provide a basis for further refinement. The proposed ADR program creates yet another avenue for contractors to pursue payment over and above the original bid amount and to resolve certain other contract disputes short of litigation. The Department is responsible for ensuring that this custom-designed process achieves efficient dispute resolution without compromising the Department's fiscal control over the CA/T Project.

2. **Specify the qualification requirements and selection criteria for the Department's pool of Dispute Review Board (DRB) appointees, publicly advertise the intention to hire, and take other steps to ensure a pool of qualified candidates chosen on the basis of open and fair competition.** The Department should include the qualification requirements and selection criteria to the Request for Qualifications (RFQ), the departmental DRB members' contracts, Special Provision 7.16 and all other relevant documents which inform the DRB members and others of the DRB members' obligations.

3. **Obtain a formal written opinion from the State Ethics Commission concerning the applicability of M.G.L. c. 268A (statute dealing with conflicts of interest) to DRB appointees.** In particular, the DRB appointees selected from the Department's pool appear to constitute *State Employees* as determined by State Ethics Commission guidelines; these appointees may qualify for the less restrictive ethics provisions applicable to so-called *Special State Employees*.

4. **Define clearly the standards to which the Department refers when it states that all DRB members are required to conform to the *highest ethical standards of business conduct*.** The Department should include these standards in the RFQ, the departmental DRB members' contracts, Special Provision 7.16 and all other relevant documents which inform the DRB members and others of the DRB members' obligations.

5. **Clarify certain terms and phrases (e.g., *contract, earliest practicable time, certification*) which invite costly misunderstandings and delays.**

I have enclosed with this letter a more detailed discussion of this Office's concerns and recommendations regarding the proposed ADR program. We appreciate the opportunity to comment. Do not hesitate to contact this Office if you have questions or we may be of further assistance.

Sincerely,

Wendy Haynes, Chief
Contract Audit and Review Division

Enclosure

cc: Anthony E. Battelle, Chief Legal Counsel

1. Evaluate the cost-effectiveness of the ADR program on an annual basis to determine whether it is achieving the objectives envisioned by the Department and to provide a basis for further refinement.

According to CA/T staff, the objective of the ADR program is to resolve conflicts in the fastest and least costly manner, without jeopardizing the integrity of the CA/T Project. The Department believes the proposed ADR program will save millions of dollars in costs associated with litigation. Department staff was unable to provide data to support that conclusion. This Office is concerned because the Department's conclusions are based on educated guesses. Only the actual results of the program will show whether the objectives have been achieved. The apparent lack of data on the results of other programs underscores the need to evaluate the results of this program after it is implemented.

This Office recommends that the Department institute a system to assess the cost-effectiveness of the new ADR program. CA/T staff should track ADR-related indirect and direct costs. At least annually, the Department should measure and evaluate the cost-effectiveness of the ADR program. The results of this analysis should be used to improve the program and to determine whether the as yet unknown cost of the ADR program is justified by the benefits.

Close scrutiny of benefits and costs of the ADR program is particularly important because the contractor already has other non-litigious avenues for resolving contract disputes. One could argue that the ADR program duplicates some aspects of the other avenues. The Department should consider whether under the proposed ADR process, dispute resolution objectives in terms of time, money and outcome are better achieved than under the MHD Board of Contract Appeal, the MHD Hearing Examiner or the Superior Court Construction Mediation Program.

2. Specify the qualification requirements and selection criteria for the Department's pool of DRB appointees, publicly advertise the intention to hire, and take other steps to ensure a pool of qualified candidates chosen on the basis of open and fair competition.

A well-crafted DRB member procurement process will help ensure fair and open competition in member selection. The Department must pre-determine the selection methodology, and be as objective as possible. In its present form, Special Provision 7.16 does not describe a prequalification process for DRB candidates. To its credit, the Department has requested this Office's input regarding the prequalification and procurement process for DRB members. On April 28, 1993, this Office responded to the request by forwarding to Mr. Kurt Dettman general guidelines for qualification and selection criteria to be considered by the Department. We look forward to providing additional input to the Department as soon as a draft of the prequalification and selection process is available. In drafting the DRB qualification and selection criteria for the Department's DRB member, the Department should consider the following:

- The DRB procurement process should describe "rules of the game" to ensure a fair, open procurement process to create a high calibre pool of talent.
- The scope of services in the RFQ should clearly define and convey the Department's needs and the DRB members' responsibilities.
- The RFQ should describe the methodology the Department will use to evaluate and select the candidates.
- The RFQ should describe payment policies for DRB members, and should contain a sample copy of the terms of the contract, including any special provisions.
- The selection methodology should evaluate candidates based on minimum and comparative evaluation criteria.
- The RFQ should include information the Department requires to ensure that candidates are free of conflicts which could compromise the integrity of the program or unnecessarily expose appointees to public criticism.
- The Department should determine the criteria for selecting its list of three candidates from the applicant pool.

Obtain a formal written opinion from the State Ethics Commission concerning the applicability of M.G.L. c. 268A (statute dealing with conflicts of interest) to DRB appointees.

M.G.L. c. 268A §1(q) defines a *State Employee* to be *a person performing services for or holding an office, position, employment, or membership in a State Agency, whether by election, appointment, contract of hire or engagement, whether serving with or without compensation, on a full, regular, part-time, intermittent or consultant basis, including members of the general court and executive council.* In determining *whether an individual who is an employee or officer of a private corporation which contracts with a public entity should be deemed a public employee*, the State Ethics Commission considers various factors. The most compelling factor, in this instance, is *whether the individual's services are expressly or impliedly contracted for.*[1] Based on the proposed DRB arrangement, DRB members appear to fall within the State Ethics Commission guidelines. This Office recommends that the Department obtain a formal written opinion on this matter from the State Ethics Commission.

According to CA/T staff during a meeting with this Office, the Department's appointee may be paid through the Department's contract with Bechtel/Parsons Brinckerhoff (B/PB), rather than directly by the Commonwealth. In this Office's view, classifying DRB members as subconsultants to B/PB does not alter the relationship between departmental DRB members and the Department.

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[1] State Ethics Commission Opinion EC-COI-87-19 (citing EC-COI-87-8); also see EC-COI-86-21.

While we are pleased that the proposed ADR program does require some conflict of interest disclosures, this Office is of the opinion that disclosures required under M.G.L. c. 268A will better protect the public interest. The disclosure requirements[2] should be an attachment to Special Provision 7.16 provided to all DRB candidates upon their declaration of interest.[3] The disclosure form is, in our view, an important element in protecting the Department and the public interest. Disclosure is particularly important since as presently conceived, the ADR program permits an appointee to sit on more than one DRB and DRB members may have other CA/T project involvement. This Office is concerned that time constraints and/or conflict of interest issues will arise as a result of a member sitting on more than one DRB. This concern is heightened when the disputes involve interfacing issues. This Office suggests the Department provide guidance to DRB appointees on how to prevent and deal with such problems.

Department staff expressed concern that the pool of potential DRB appointees would be too small to meet their needs if firms or people were disqualified because of a conflict of interest under M.G.L. c. 268A. In this Office's view, the risk that conflicts of interest will undermine the integrity of the ADR and DRB process far outweighs the potential that too few DRB candidates will be qualified to serve. Indeed, the DRB applicant pool ought to be restricted to only those individuals who are free of conflict.

This Office recommends that the Department seek a formal written opinion from the State Ethics Commission to determine whether DRB members are *State Employees* or *Special State Employees*[4] subject to M.G.L. c. 268A. The Department should set forth the definition and requirements of *State* and *Special State Employees*, if applicable, in the RFQ, the DRB members' contract, Special Provision 7.16 and all other relevant documents which inform the DRB members and others of a DRB members' obligations.

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[2] Since a DRB candidate has no way of knowing all of the parties, including subconsultants, involved in CA/T contracts, the Department should provide this information so that DRB candidates can make useful disclosures.

[3] While a DRB applicant's involvement in other CA/T contracts should not constitute automatic disqualification, this Office recommends that disclosure of any involvement in other CA/T and Massachusetts contracts be required. The Department should establish guidelines for disqualifying a DRB candidate or member because of involvement in other CA/T contracts.

[4] Under M.G.L. c. 268A, a subset of *State Employees* exists called *Special State Employees*. Conflict of interest requirements for *Special State Employees* verses *State Employees* are different in that M.G.L. 268A §§ 4 and 7 are applied in a less restrictive way to *Special State Employees*.

4. Define clearly the standards to which the Department refers when it states that all DRB members are required to conform to the *highest ethical standards of business conduct.*

According to CA/T staff during a meeting with this Office, the Department plans to secure DRB member services by entering into technical service subcontracts. As you know, Project Procedure 609, Rev. 0, entitled *B/PB Technical Service/Subcontract/Subconsultant/ Agreement Administration* is applicable. Project Procedure 609 requires *[the] Joint Venture to administer its subconsultants and technical service subcontracts in conformance with the highest ethical standards of business conduct.* The Department should clearly define what is required for a person to conform to *the highest ethical standards of business.* Without commenting on the adequacy of Project Procedure 609, this Office believes that in the interest of consistency and for whatever protection Project Procedure 609 offers, the Department should require conformance with the standard in Project Procedure 609. This Office recommends that relevant portions of Project Procedure 609 be attached to the Request for Qualifications (RFQ), the DRB members' contract, Special Provision 7.16 and all other relevant documents which inform the DRB members and others of DRB members' obligations.

5. Clarify certain terms and phrases (e.g., *contract, earli* [illegible] *practicable time, certification*) which invite costly misunderstandings and delays.

This Office recommends that the Department clarify several vague words and phrases in order to prevent confusion or misinterpretation of Special Provision 7.16. Below is a list of ambiguous words and phrases. The Department should consider including a definitions section in Special Provision 7.16.

- ***Contract* (Special Provision 7.16 and attachments)**

The word *Contract* appears throughout Special Provision 7.16 and its attachments. Its meaning is ambiguous. It is not always clear whether the word *Contract* refers to the construction contract or the DRB members' employment contract. According to your staff, *Contract* refers to the specific construction contract package on which a DRB member hears disputes. But, in section I.B.2.(b) and I.B.4 of "Qualifications of Dispute Review Board Members," the term *Contract* appears to refer to the DRB members' contract.

A precise use or definition of the word is especially important where the word *Contract* relates to conflict of interest matters. Whether the term refers to the DRB members' employment contract will directly impact the scope of the conflict of interest matters. This Office recommends the Department define what it means by the word *Contract* and then use the word consistently throughout Special Provision 7.16 and its attachments.

- ***The contractor . . . shall be entitled to timely payment of all proper Applications for Payment to the extent they are unaffected by the Dispute. (Special Provision 7.16.B.)***

The usage of the word *they* is ambiguous. It is unclear whether *they* refers to the contractors or payment. Thus, it is unclear whether the contractor will be paid for work that is affected by the dispute.

- ***[A]s soon as practicable* (Special Provision 7.16.C.)**

Consider specifying time parameters. At a minimum define the term *practicable*.

- ***[E]arliest practicable time* (Special Provision 7.16.D.2.)**

As currently drafted, there is no limit on the amount of time allowed before the meeting must be held. This invites stall tactics and unnecessary delays. Again, clarify how *practicable* will be judged.

- **Special Provision 7.16.D.2., in general**

This provision establishes no limit to the time the DRB may take to conduct hearings and issue its findings and recommendations. How does the Department judge whether the DRB is deadlocked and another remedy is needed?

- ***[F]ee-based independent consulting services on other projects* (Exhibit A "Dispute Review Board Rules and Procedures" I.B.2.)**

It is unclear whether fee-based independent consulting services on other projects includes or excludes any or all other CA/T project work.

- ***. . . any prior involvement in the Central Artery/Tunnel Project of a nature that could compromise his/her ability impartially to review disputes* (Exhibit A "Dispute Review Board Rules and Procedures" I.B.3.)**

Nowhere does the Department define what would constitute involvement of a nature that would compromise a DRB members' *ability impartially to review disputes*. This Office recommends that the Department establish how it will judge whether a DRB member's circumstances compromise his or her *ability impartially to review disputes*.

- ***[O]ther projects* (Exhibit A "Dispute Review Board Rules and Procedures" I.C(b))**

It is unclear if *other projects* includes all, or only specific CA/T contracts, or any contracts with the Commonwealth in which the potential DRB member is involved. It is also unclear whether *other projects* includes other CA/T construction projects, other CA/T projects or other projects for the Commonwealth. The Department should clarify.

- ***[C]ertification* (Exhibit A "Dispute Review Board Rules and Procedures" I.C(c))**

Neither the term *certification* nor the party responsible for certifying is clear. These terms should be clarified.

- **Exhibit A "Dispute Review Board Rules and Procedures" II.B.**

Who selects the DRB Chairperson if the two designated members cannot agree?

- **Transition rules (Exhibit A "Dispute Review Board Rules and Procedures" II.E.)**

Please provide a copy of these rules to this Office. None was forwarded with the draft of the ADR program.

- ***[A]t times of significant construction events* (Exhibit A "Dispute Review Board Rules and Procedures" III.C.)**

It is unclear what constitutes a *significant construction event*. How will DRB members know what constitutes a significant construction event or when it occurs?

- ***. . . it [a party] shall notify . . . the DRB in writing at least ten days prior to the meeting," and "[i]f such notice is given in a timely manner . . . ."* **(Exhibit A "Dispute Review Board Rules and Procedures" IV.E., third paragraph)**

Does *timely manner* mean at least ten days prior? This should be clarified.

Massachusetts Highway Department
Central Artery/Tunnel

RECEIVED
AUG 26 1993
OFFICE OF
INSPECTOR GENERAL

August 25, 1993

Wendy Haynes
Deputy Inspector General
Inspector Generals Office
One Ashburton Place
Boston, MA 02108

Re: Central Artery/Tunnel Project
Alternative Dispute Resolution Program

Dear Wendy:

Enclosed please find a copy of the final Alternative Dispute Resolution Program that we will be implementing on the Central Artery/Tunnel Project in the coming weeks.

Thank you for taking the time to review earlier drafts and offering helpful comments which produced many improvements in the Program.

We are very optimistic that this Program will reduce litigation and the burdensome costs that attend upon it.

Sincerely,

Tony

Anthony E. Battelle
Chief Legal Counsel

AEB/tis

One South Station • Boston • Massachusetts • 02110 • Phone 617-951-6000 • Fax 617-951-

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SECTION FOUR

Technical Assistance Review of the Reprocurement Waiver Process

Assistance Requested:	October 26, 1993
Assistance Letters:	August 5, 1994, May 17, 1995
Project Responses:	November 23, 1993, August 30, 1994 December 30, 1994

Note: The Project requested that this Office review Project procedures for processing procurement waivers and examine whether the Project had approved the waivers in conformance with State regulations. This Office commented by letter, dated August 5, 1994. This Office found that the Project had not complied with applicable regulations and that poor management practices existed. This Office commented on Project procedures by letter, dated May 17, 1995.

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Massachusetts Highway Department
Central Artery/Tunnel

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OCT 28 1993

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October 26, 1993

Commonwealth of Massachusetts
Office of the Inspector General
One Ashburton Place
Boston, MA 02108

Dear Inspector General Cerasoli:

Pursuant to the Interdepartmental Service Agreement between the Central Artery/Tunnel Project and the Office of Inspector General, I am writing to request the technical assistance of your office on a consultant service contract matter. In October, 1992 the Executive Office of Administration and Finance delegated to the Massachusetts Highway Department the responsibility of approving reprocurement waivers pursuant to 801 CMR 20.09 on consultant service contracts on the Central Artery/Tunnel Project.

The Project has taken action to implement the delegation of waiver authority and has developed a waiver procedure. Specifically, the Project requests your assistance in reviewing existing Project Procedures for processing these waivers in order to ensure that they are being approved in conformance with the Commonwealth's Service Contract Regulations, and to ensure that this process is being done in a manner that is not vulnerable to fraud, waste, or abuse.

In keeping with the discussion at our meeting of October 19, 1993 where the waiver issue was discussed, I would like the focus of your review to begin with the specific CA/T contracts you have identified as problematic.

Thank you for your consideration of this request. My point of contact on this matter is Susan Cobb.

Sincerely,

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OCT 28 1993

OFFICE OF
INSPECTOR GENERAL

For Peter M. Zuk
Project Director

PMZ/SDC

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093-3981

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Massachusetts Highway Department
Central Artery/Tunnel

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NOV 2 9 1993

OFFICE OF
INSPECTOR GENERAL

November 23, 1993

Office of Inspector General
One Ashburton Place
Boston, MA 02108

Attn. Wendy Haynes
Deputy Inspector General
for Contract Audit and Review

Dear Ms. Haynes:

In accordance with the Project's request for technical assistance on the Project's reprocurement waiver process pursuant to 801 CMR 20.09, I am forwarding to you the following documents:

1. Executive Office of Administration and Finance Letter to EOTC discussing delegation of authority to approve CA/T waivers;
2. Memorandum from Project director to Secretary of EOTC (including attachments) discussing actions taken to implement procedures pursuant to waiver approval delegation;
3. July 12, 1993 directive to Joint Venture directing implementation of recommendations of waiver letter working group and development of an official Project Procedure for the waiver process; and
4. September 30, 1993 directive to Joint Venture directing implementation of the Project Procedure for waivers (part of Project Procedure 406) and implementation of the PCN level waiver review form.

Sincerely,

FOR Peter M. Zuk
Project Director

AD-2.4.2
093-4371

One South Station • Boston • Massachusetts 02110 • Phone 617-951-6000 • Fax 617-951-0897

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The Commonwealth of Massachusetts

Office of the Inspector General

One Ashburton Place, Boston, MA 02108

ROBERT A. CERASOLI
INSPECTOR GENERAL

JOHN W. McCORMACK
STATE OFFICE BUILDING
ROOM 1311
TEL: 727-9140
FAX: 723-3540

August 5, 1994

Peter M. Zuk, Project Director
Central Artery/Tunnel Project
One South Station; Fourth Floor
Boston, Massachusetts 02110

Dear Mr. Zuk:

I am writing in response to your request for technical assistance in assessing and improving the Project's system for waiving certain requirements of State regulations (801 CMR 20.00). Project staff has already made an effort to comply with the various laws, regulations, and agreements that govern procurement of professional services. Nonetheless, significant problems remain: the Department has not complied with the regulations, and the practice of issuing notices to proceed before significant contract changes have been approved is a poor management practice and appears not to comply with State law.

On July 19, Noreen Hazelton and I discussed our preliminary findings with Bill Flynn, Tony Battelle, and Susan Cobb of your staff. The purpose of this letter is to summarize our July 19 discussion:

- In some cases, the Highway Department amended contracts without obtaining required waivers. In other cases (11 of 38 approved waivers), the Project failed to file approved waivers with the Office of the Comptroller as required.

- Our review also revealed that for 68 percent of the services (154 of 225) listed in the waivers, the Highway Department first directed the consultants to begin work, and only later sought the necessary waivers. Moreover, in 34 percent of the cases we examined (76 of 225), the Highway Department had already modified the contract to add the services before B/PB generated a request to waive State regulations.

- In some cases, services in waivers were cancelled and the funds were later allocated for different purposes. In other cases, funding was provided for services that have not been added to contracts. It is unclear how funds approved for particular purposes were finally used.

- In some cases, the Highway Department's waivers, which were originally generated by B/PB, contained incomplete and inaccurate information. Thus far, waivers have contained more than half a million dollars for "future unspecified services." The cost of services that *were* specified were overstated by millions of dollars. Moreover, in most waivers, the level of FHWA funding was substantially overstated.

- The Project only recently began complying with the January 20, 1993 memorandum of agreement between EOTC and the Project by providing monthly status reports on contingency fund expenditures.

We will continue our work on this matter and will apprise you of the final results of our review before the end of this quarter. In the meantime, we urge you to remedy the following problems as soon as possible:

1. Some waivers are not on file with the Comptroller's Office as required under the regulations.
2. Contrary to the current regulations, there is no written delegation of authority on file from Administration and Finance granting the Project authority to waive the regulations.
3. There is no record that the Secretary of Transportation has delegated signature authority to the Project Director.
4. Project procedures have not yet been updated to remedy the deficiencies we have brought to your attention over the past several months.
5. The Project has no system for tracking how funds for cancelled services were spent.

Your staff said that procedures would be redrafted to address many of these concerns; we look forward to reviewing a revised draft. I understand that Susan Cobb of your staff and Noreen Hazelton, our project leader for this review, have already met to discuss this Office's preliminary findings in greater detail. Our thanks for you and your staff's cooperation, assistance, and commitment to addressing these important matters.

Sincerely,

Wendy Haynes
Deputy Inspector General for
Contract Audit and Review

cc: William Flynn, Deputy Project Director

Massachusetts Highway Department
Central Artery/Tunnel

RECEIVED

AUG 31 1994

OFFICE OF
INSPECTOR GENERAL

August 30, 1994

Wendy Haynes
Deputy Inspector General
Contract Audit and Review
Office of Inspector General
One Ashburton Place
Boston, MA 02110

Dear Ms. Haynes:

I am writing in response to your letter of August 5, 1994 regarding the preliminary results of your office's review of the Project's procedures for waiving certain requirements of state regulations. I commend your staff for its efforts, and appreciate your assistance to the Project on this important matter.

With regard to the specific findings of your review, the Project has initiated remedial action on the following matters:

1. Waivers not on file with the Comptroller's Office: your staff has made us aware of the specific waivers not on file, and we have forwarded them to the Office of the Comptroller;

2. Current delegation of waiver authority: the Project is working with the Executive Office of Administration and Finance to ensure that the delegation is current;

3. Delegation of signature authority from the Secretary to the Project Director: the Project currently is reviewing this.

Susan Cobb of the Project's legal staff would like to meet further with Ms. Hazelton to discuss the Project procedures for waivers in greater detail. Thank you for your office's cooperation and assistance on this important matter.

Sincerely,

For WS Flynn

Peter M. Zuk
Project Director
AD - 2.4.2
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One South Station • Boston • Massachusetts 02110 • Phone 617-951-6000 • Fax 617-951-0897

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Massachusetts Highway Department
Central Artery/Tunnel

RECEIVED

JAN 03 1995

OFFICE OF
INSPECTOR GENERAL

December 30, 1994

Noreen Hazelton
Chief of Contract Audit and Review
Office of Inspector General
One Ashburton Place
Boston, MA 02110

Dear Ms. Hazelton:

I am writing relative to your office's review of the Project's repocurement waiver procedures pursuant to the Project's request for technical assistance. In your office's most recent Interagency Service Agreement Quarterly Report you articulate several findings related to Project waivers.

At your direction, the Project has addressed the findings related to missing waivers not on file with the Office of the Comptroller, contingency fund reporting, and signature authority. You also have articulated a number of other findings and recommend that the Project redraft its Project Procedures in order to address these concerns.

We are in general agreement with your additional findings, however, we believe that they relate more to the execution and monitoring of Project Procedures than to their drafting. It is our understanding that the Project Procedure for reprocurement waivers, as currently drafted, is not in violation of the Commonwealth's Service Contract Regulations, 801 CMR 20.00. It also is our understanding that this conclusion is consistent with your office's findings.

The Project appreciates your office's efforts in this review, and we look forward to working with you on other Project matters.

Sincerely,

Peter M. Zuk
Project Director

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094-4014

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The Commonwealth of Massachusetts

Office of the Inspector General

One Ashburton Place, Boston, MA 02108

ROBERT A. CERASOLI
INSPECTOR GENERAL

JOHN W. McCORMACK
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May 17, 1995

Peter M. Zuk, Project Director
Central Artery/Tunnel Project
One South Station, Fourth Floor
Boston, Massachusetts 02110

Dear Mr. Zuk:

The purpose of this letter is to complete this Office's technical assistance you requested in regards to the Project's waiver process pursuant to 801 CMR 20.09 and to alert you to related unresolved issues.

As you know, the Project's technical assistance request stemmed from a meeting (October 19, 1993) during which this Office advised you of problems with the Project's use of waivers to State procurement regulations. In your November 23, 1993 request letter, the Project asked for assistance in two areas: identifying problematic contracts and reviewing the Project procedures for processing waivers.

In responding to the first half of your request, this Office conducted a review of the waiver process at the Project. The results of this review were discussed with you at a July 19, 1994 meeting and summarized in an August 5, 1994 letter. The Project responded in an August 30, 1994 letter and informed this Office of immediate steps taken to address this Office's concerns and requested that staff from this Office meet with Project staff to provide further details of this Office's review. In a December 30, 1994 letter, you informed this Office that the Project had taken steps to address the issues and findings raised by this Office.

In responding to the second half of your technical assistance request, this Office reviewed the waiver procedures incorporated into Project Procedure 406: Design Contract Modifications. This Office had anticipated a redraft of these procedures which would address this Office's concerns. In your December 30, 1994 letter you stated that because the Project procedures were not in violation of the State's service contract regulations, they would not be revised from their current form. These procedures were provided by your staff on March 9, 1995.

In the majority of cases, the Project starts with the assumption that a major change to a contract merits a waiver. This is evident in the sheer numbers of amendments to contracts (225 at a cost of $80 million) with the use of waivers. In most cases, consultants were directed to begin work before the waiver was presented for approval. When the waivers were presented, they did not contain the required supporting documentation. Even the procedures for waivers, detailed below, are based on the assumption that approval is inevitable in that there are no provisions for non-approval contained in the procedures.

When it becomes clear that a major change to the scope or cost of services is needed, the Project should assume that a new procurement is required. This requirement should be waived only in limited circumstances.

Scope:

This Office's compliance review was limited to section 3.1.3 of Project Procedure 406, Design Contract Modifications, and the attachment referenced in that section. Although other sections of Project Procedure 406 are used to illustrate findings relative to section 3.1.3, no compliance review was performed for those section.

Finding:

Project Procedure 406 does not contain the guidance necessary to ensure compliance with the State's service contract regulations.

In sharp contrast to the detail contained in twelve pages and several attachments to other sections of Project Procedure 406, the waiver portion of these procedures is limited to the following two sentences:

> 3.1.3 During the preparation of the PCN, the AR and CCA must review the PCN relative to the waiver requirements set forth in 801 CMR 20.09. Attachment 406-A7 outlines the procedures for developing the waiver letter if one is needed.

The procedures contained in attachment 406-A7 do not provide answers to basic waiver questions:

- When is a waiver required?
- How is a waiver developed?
- Who is responsible for what task?
- How does the waiver requirement affect the modification of a contract?

These procedures do not adequately describe **when** a waiver is required. Service contract regulations 801 CMR 20:00 define four "Major changes" to a contract that would require a new competitive procurement or a waiver from the competitive procurement provisions and the approval of the proposed amendment or modification. The Project's procedures describe only two circumstances contained in the regulations in which additional services to a contract would require a competitive procurement or a waiver:

- A major change or addition to the type or scope of service included in the original RFP; or

- an increase in the maximum obligation of the contract by 20 percent.

The Project's waiver procedures omit the following two (of the four) circumstances defined in the regulations as "Major Changes":

> - Major change in the identity or structure of the Contractor . . . which results in a material change in the Contractor's business relationship or contractual responsibilities with the Department. (does not include a change in name only); and
>
> - An increase or significant change in any applicable fixed Rate(s) in the Contract or bid Proposal.

There is also no provision in the waiver procedures that would account for a service that initially does not meet the definition of a "major amendment" but then, due to increased costs or more accurate estimates, the service meets that definition. For example, a service is approved at the PCN level with an estimate that does not increase the maximum obligation of the contract by 20 percent or more. However, at the conclusion of negotiations the agreed price is higher and will increase the maximum obligation of the contract by 20 percent or more. A waiver would then be required. Because negotiated prices tend to be significantly higher than estimated PCN cost estimates, provisions must be included in the Project's procedures to ensure compliance.

The waiver procedures are silent on **how** to develop a waiver; the procedures provide no guidance on form, content, or the regulatory requirements for "documentation supporting the special circumstances or need for such requested relief."

The waiver procedures are also silent as to **who** prepares the waiver, performs various tasks, tracks the waiver through the approval process, and ensures that funds are used for the purposes intended. Some general responsibilities are identified as belonging to B/PB:

> *B/PB prepares* a waiver request form . . . *B/PB must verify* with follow-up documentation . . . that the additional funds are in fact used for something other than the services authorized by the waiver . . . *B/PB must prepare* a new waiver request. [Emphasis added.]

Other responsibilities such as tracking the waiver through the maze of review and approval entities are not assigned to either MassHighway or B/PB.

The waiver procedures make no provisions as to **what** happens if the waiver is not approved by any of the nine individuals or entities that review the waiver:

> Project Director of Design and/or Legal counsel, CEPO, Fiscal Management Office, Chief Engineer, Board of Commissioners, MHD Commissioner, Secretary EOTC, and Comptroller.

As previously stated in this letter, these procedures are based on the assumption that approval is inevitable. This is evident by the procedure's absence of provisions for non-approval.

The waiver procedures, including the attachment, are different than the flow chart attachment and the procedures for modifying a contract. For example, the waiver attachment states:

> **If** the waiver request is approved at this level, B/PB prepares a contract addendum, contract modification, MHD Board memorandum, funding authorization 681 document, and service modification form for submittal to the Department. [Emphasis added.]

The Project procedures for modifying a contract do not indicate, as the waiver procedures do, that the modification and other documents are prepared if the waiver request is approved. In addition, the "Narrative to PCN & Mod Process Flow Chart" is silent on the issue of waivers entirely.

Project Procedure 406, including its attachments, does not state that the consultant can not begin services (NTP) until the waiver is approved and filed with the Comptroller's office as required by regulation. Allowing the consultant to begin services prior to obtaining a "waiver of the procurement procedures and the approval of the proposed amendment or modification" defeats the purpose and intent of this regulatory process.

Recommendations

1. Revise Project Procedure 406 to incorporate requirements of 801 CMR 20.00 and specify responsibilities of MassHighway, B/PB and individual staff for each organization.

2. Require B/PB to present documentation supporting the unforeseen or emergency circumstance of the extra service to MassHighway in order to meet the conditions under which a waiver is permitted. If the circumstances meet this condition, the supporting documentation must be filed at the Comptroller's Office along with the waiver document.

3. Direct B/PB to provide a more accurate cost assessment for services being added to existing contracts. Currently, a cost estimate range is included at the PCN level. This wide range is not adequate to determine if the services will fall under the category of a "major amendment" to the contract and require a waiver from the competitive procurement process.

4. Incorporate provisions into project procedures that would account for a service initially not requiring a waiver and then at a later date, because of increased costs or more accurate estimates, a waiver becomes required. Because negotiated prices tend to be significantly higher than estimated PCN cost estimates, provisions must be included in the Project's procedures to ensure compliance.

5. Incorporate the revised waiver procedures into Project Procedure 406 flow charts and procedures for modifications.

6. Include as an attachment or cite Service Contract Regulations 801 CMR 20.00 in Project Procedure 406.

7. Incorporate language into Project Procedure 406 that reflects the provisions of 800 CMR 20.03 which prohibits the contracting for services (including amendments to contracts) and services beginning prior to certain approvals and filing of forms with the Comptroller's Office. Ensure that the Project is not directing work to begin (NTP) prior to fulfilling the requirements of 801 CMR 20.00.

Unresolved Issues

The following are issues from this Office's compliance review of the Project's waiver process, previously communicated to Project staff, which remain unresolved. This Office strongly recommends that MassHighway take steps, including incorporating the requirements in project procedures, to ensure compliance with all provisions of 801 CMR 20.00.

1. MassHighway has not produced any evidence that it has the authority to approve its own waivers. As this Office informed MassHighway in an August 5, 1994 letter, there is no written delegation of authority on file with the Comptroller from Administration and Finance granting authority as required by 801 CMR 20.11 (4). In an August 30, 1994 letter, the Project informed this Office that "the Project is working with the Executive Office of Administration and Finance to ensure that the delegation is current." The Comptroller's Office has informed this Office that, as of March 15, 1995, no delegation was on file. We recommend that this necessary compliance step be taken immediately.

2. The Project's management practice of instructing consultants to begin work (NTP) prior to contracting for those services puts the Commonwealth and the consultants at risk. Of the 225 services contained in waivers, work began on a 154 prior to the waiver being filed at the Comptroller's Office. The Commonwealth loses control of its ability to approve and ensure that funds are available for those services. The consultant runs the risk of non-payment for those services; the Commonwealth has no legal obligation to pay for services performed prior to the formation of a valid contract. We strongly urge you to ensure compliance with service contract regulations and contract for service prior to directing consultants to begin work. (See 801 CMR 20.03 (1), 20.08 (1), 20.09 (1).)

3. The Project's management practice of modifying contracts and making payments to consultants prior to preparing and filing request for approval to waive requirements for competition contravenes the regulations. Of the 38 waivers reviewed, eleven were not on file at the Comptroller's as required by regulation. (See 801 CMR 20.03 (1), 20.08 (1), 20.09 (1).)

4. At the time of this Office's review, MassHighway had failed to file for time extensions and renewals for service contracts as required by CMR 20.09. Under these regulations, MassHighway can extend a contract for a period not to exceed six months. An extension is permitted to enable contract work to be completed or to allow MassHighway "to complete a new competitive procurement without an interruption of Services." Anything beyond the six month limit requires a written waiver and must be filed in accordance with 801 CMR 20.03 and 20.08. Since the time of this review, waivers have been written for time extensions and renewals. This Office recommends the Project perform a compliance review of this effort.

5. MassHighway's filing for exemptions from contract duration requirements was limited to just a few of the contracts that required this exemption. When exemptions, in the form of waivers, were sought, it was after the contracts had been negotiated and signed. Regulations require a waiver prior to contracting. This Office recommends the Project perform a compliance review of this effort. (See 801 CMR 20.04 (3).)

6. The Project's waiver requests did not contain the minimum regulatory requirements. According to section 20.11 of these regulations, waivers must contain at a minimum five elements. Project waivers did not contain the required supporting documentation to justify the special circumstances or need for exemption from these regulations. Project waivers reviewed were limited to a memo which briefly described the services to be waived from the procurement process. This Office urges MassHighway to comply with these regulations and include all pertinent supporting documentation with its waiver requests.

7. The Project's waivers misstate what FHWA will pay for. Most waivers state that FHWA has concurred with the increase of funds to the contract and list an amount that FHWA will participate (usually 90%). This amount of FHWA participation applies to the increase in the amount of the contract not the individual services contained in the waivers. In spite of this rejection, the waivers stated that FHWA would participate with 90% funding. This information was known in most cases prior to the waiver being written but was omitted. This Office strongly urges MassHighway to clarify the meaning of FHWA participation as recorded in waivers and incorporate the definitions into the Project's waiver procedures.

8. Project waivers sought additional funds for unspecified future changes. Included in four of the 38 waivers were increases for unspecified future changes in the amount of $585,930. Those funds were added to the Special Engineering Contingency Fund. This is a misuse of the waiver provisions of service contract regulations which are not intended to be a funding mechanism for unspecified services. This Office recommends incorporating language into project procedures to prevent this practice and conducting a review of those contracts to determine for what purpose these funds were applied.

9. Costs reported in waivers are substantially different than both B/PB's estimates and the final negotiated costs of the services. For example, the 225 services contained in waivers were initially approved by the Project at a cost estimated to be between $62 and $67.6 million. In addition, of the 38 waivers, only in 11 did the amount requested match the final negotiated costs of the services. Fourteen of the waivers requested significantly higher amounts - often in the millions of dollars - than the actual cost of the services after negotiations.

10. Money placed into special engineering contingency funds for services described in waivers has been allocated for other purposes. Sixteen services in waivers, at a cost of between $4 - $4.2 million, were cancelled after the funds were added to the Special Engineering Contingency Fund. The money for those services, however, was never returned and eventually the Contingency Funds were depleted. This Office recommends that the Project account for this money and determine what the funds eventually paid for.

11. At the time of this Office's review, seven waivers contained 22 services which were funded yet never completed the Project's approval process. Some of these services were proposed years ago but no action had been taken by Project management. This Office recommends that the Project review the status of these services and ensure the money placed in the Special Engineering Contingency Fund for these services is accounted for and will be used for its intended purpose.

In providing this information, this Office considers the Project's technical assistance request fulfilled. If you or your staff have any questions about this information please contact me.

Sincerely,

Noreen S. Hazelton

Noreen S. Hazelton, Chief
Contract Audit and Review Division

CC: William Flynn, Deputy Project Director
Susan Cobb, Counsel

SECTION FIVE

Technical Assistance Review of the Integrated Project Control System (IPCS) Design Services Reprocurement

Assistance Requested: June 7, 1994,[1] February 24, 1995

Assistance Letters: July 6, 1994, June 9, 1995

Project Responses: July 15, 1994, September 6, 1996

Note: The Project requested that this Office review and comment on the Project's proposal to reprocure IPCS design services. This request related to earlier criticism of the Project's management of the IPCS contract. This Office responded to the Project's request by letters, dated July 6, 1994 and June 9, 1995. The Project responded more than one year later by letter, dated September 6, 1996.

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[1] The Project also requested assistance in a number of other areas. For most of the other areas, this Office provided assistance. In a few instances, the Project withdrew the earlier request.

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Massachusetts Highway Department
Central Artery/Tunnel

RECEIVED

JUN [illegible] 1994

OFFICE OF
INSPECTOR GENERAL

June 7, 1994

Robert A. Cerasoli
Inspector General
Commonwealth of Massachusetts
Office of Inspector General
One Ashburton Place
Boston, MA 02108

Dear Inspector General Cerasoli:

Pursuant to the Interdepartmental Service Agreement between the Massachusetts Highway Department and the Office of Inspector General relative to the Central Artery/Tunnel Project, I am writing to request the technical assistance of your office during fiscal year 1995 on the following matters:

Alternative Dispute Resolution for Right of Way:

> Assistance in developing of program for resolving disputes concerning damages awarded as a result of eminent domain takings in order to avoid litigation (including mediation, arbitration, or both.) Issues that must be considered in developing such a program include eminent domain laws, public records laws (access to appraisal information,) role of the Real Estate Review Board, and the MHD Board of Commissioners.

Environmental Services:

> Assistance in developing a program to maximize the beneficial reuse of clay in capping landfills and utilizing other non-hazardous excavated material as daily cover at publicly owned landfills in a manner that is both cost-competitive and meets the requirements of the Federal Highway Administration and the commonwealth procurement regulations. This would include a recommendation, including perhaps draft legislation, to allow communities that are distant from Boston to compete effectively with closer cities and towns for the delivery of clay.

Administration and Controls:

> Contract Formation Practices: evaluate current Project Procedures used in contract formation and administration including selection, use of contract formation teams, and office estimates.

One South Station • Boston • Massachusetts • 02110 • Phone 617-951-6000 • Fax 617-951-0897

Contract Invoicing and Payment Processes: evaluate the contract invoicing and payment procedures to ensure the appropriate controls are in place. This would include assuring that consistent approval standards are in place, assessing whether procedures are in place to detect and recoup overpayments, and to assess whether payments are processed in a timely manner.

Procurement Practices for Equipment Purchases: evaluate Project Procedures for equipment purchases to ensure open and competitive process and to ensure they incorporate the guidelines and protections of the state and federal purchasing regulations.

Claims and Changes Procedures: review Project Procedures and current practices of the Project Claims and Changes section to ensure that adequate controls and protections exist.

Financial Management:

Quarterly Assessment Procedure: Review current procedure for conducting quarterly assessment of B/PB's performance under the Work Program 12 contract.

Management Change Notice Process: Review current procedure for evaluating and approving Management Change Notices (MCNs) to the Work Program 12 contract including MHD independent assessment process.

Work Program Twelve Negotiations: Review the Record of Negotiations for Work Program Twelve and make recommendations for future Work Program negotiations.

Legal:

Cost Recovery Procedure: review and make recommendations on the current draft of the proposed Contract Cost Recovery (formerly Errors and Omissions) Procedure. Provide technical assistance in resolving issues such as insurance notification, insurance deductible, and the possibility of developing and Alternative Dispute Resolution Program.

Review existing procurement regulations/standard service contracts to make them shorter, more easily complied with and more user friendly.

Design and Engineering;

Assist in the development of an acceptable procedure for the award of expanded design services from a currently retained SDC to another SDC without a compromise to the Project schedule.

Assist in a the development of an acceptable procedure to close a contract with a marginally performing design consultant to reallocate unexecuted scope to the runner-up firm from the original procurement.

Assess potential points of conflict of interest within and between CA/T Project consultant selection team members.

Develop supplemental procedures for construction contractor and products procurement which establish prequalification guidelines which assure a minimum threshold of quality.

Thank you for your consideration of this request. I look forward to working with your office on these important matters.

Sincerely,

Peter M. Zuk
Project Director

PMZ/SDC

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094-1888

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The Commonwealth of Massachusetts
Office of the Inspector General
One Ashburton Place, Boston, MA 02108

ROBERT A. CERASOLI
INSPECTOR GENERAL

JOHN W. MCCORMACK
STATE OFFICE BUILDING
ROOM 1311
TEL: 727-9140
FAX: 723-3540

July 6, 1994

Peter M. Zuk, Project Director
Central Artery/Tunnel Project
One South Station; Fourth Floor
Boston, Massachusetts 02110

Dear Mr. Zuk:

Thank you for the opportunity to comment on the conflict of interest issue presented by Fluor Daniel, Inc., the top-ranked contender to review the contractual arrangement between the Department and Bechtel/Parsons Brinckerhoff (B/PB). Kurt Dettman and I have discussed the matter by telephone several times during the last two weeks. You have already taken steps to resolve potential conflicts of interest. However, those efforts do not in our view eliminate the risk.

As I understand from information your staff obtained from Fluor Daniel and provided to this Office, Fluor Daniel's subsidiary (FD) is one of several limited partners in San Diego Expressway, L.P, a California company formed to finance, design, build and operate a ten mile toll road near San Diego. The general partner in this venture is California Transportation Ventures, Inc., a company owned jointly by a subsidiary of Parsons Brinckerhoff and Transroute International S.A. The general partner controls and manages San Diego Expressway, L.P., including obtaining project financing, and later constructing and operating the toll facility. The success of the San Diego venture will determine whether the limited partners (including FD) make or lose money.

Among other factors, you should assess the risk of a conflict between Fluor Daniel's financial interest in the San Diego venture and its ability to conduct an objective analysis of Parsons Brinckerhoff's performance on the CA/T Project. For example, if you apply the tests of the State's conflict of interest law, you will find that Fluor Daniel falls short on two key components:

- Could Fluor Daniel "in the discharge of [its] official duties . . . *be required knowingly to take an action which would substantially affect . . . [its] financial interests* . . . ."? Yes. An objective study could discredit Parsons Brinckerhoff's performance on the CA/T Project. As an investor in the San Diego venture, Fluor Daniel has an interest in Parsons Brinckerhoff's reputation because it contributes in good measure to the value of Fluor Daniel's investment. The physical distance between the Boston CA/T Project and the San Diego venture makes no difference.

- Could Fluor Daniel's relationship to Parsons Brinckerhoff "cause a reasonable person . . . to conclude that . . . [Fluor Daniel] *is likely to act or fail to act*" because of its financial interest in the San Diego venture? Possibly. A reasonable person could conclude that Fluor Daniel had an incentive to soft-peddle its criticism of Parsons Brinckerhoff. We do not question Fluor Daniel's professionalism; however, the appearance of a conflict could compromise the final report's credibility.

M.G.L. 268A requires a State employee to make full disclosure of financial interest. To its credit, the Department required full disclosure in this instance and Fluor Daniel responded. Following the wisdom of the State conflict of interest law, the "appointing official" -- in this case, the Department -- should now weigh the risks and make a final written determination.

I hope our comments have assisted you in your efforts.

Sincerely,

Wendy Haynes
Deputy Inspector General for
Contract Audit and Review

cc: William Flynn, Deputy Project Director
Kurt Dettman, Counsel

Massachusetts Highway Department
Central Artery/Tunnel

RECEIVED

JUL 15 1994

OFFICE OF
INSPECTOR GENERAL

July 15, 1994

Wendy Haynes
Deputy Inspector General
for Contract Audit and Review
Office of Inspector General
One Ashburton Place
Boston, MA 02108

Dear Ms. Haynes:

Thank you for reviewing Bechtel/Parsons Brinckerhoff's proposal to reprocure certain design services for the Integrated Project Control System (IPCS). The Project appreciates your timely response to this matter.

I am in full agreement that MHD should not pay B/PB for any services currently included in the scope of the Work Program 12 contract. As is the procedure on all additional scope proposals, MHD currently is conducting an independent assessment of B/PB's proposed management change notice (MCN) for additional services on the IPCS contract. In doing so, we intend to evaluate and to clearly define, including both schedule and price, any approved additional scope.

I also agree that the Project is in the position to utilize lessons learned from the existing IPCS contract. Once we have completed our evaluation of B/PB's formal recommendation and proposed MCN, we will begin developing the new design package. At such time the Project will define qualifications and performance requirements for the new RFQ/P, as well as further define the responsibilities of all parties involved in this contract.

Thank you for your comments, and I look forward to working with your office on this matter.

Sincerely,

For W S Flynn
Peter M. Zuk
Project Director

AD-2.4.1
094-2261

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Massachusetts Highway Department
Central Artery/Tunnel

RECEIVED

FEB 27 1995

OFFICE OF
INSPECTOR GENERAL

February 24, 1995

Wendy Haynes
Deputy Inspector General for
Contract Audit and Review
Office of Inspector General
One Ashburton Place
Boston, MA 02108

Dear Ms. Haynes:

I am writing to clarify the Central Artery/Tunnel Project's request for technical assistance relative to the Integrated Project Control System (IPCS) contract. As you are aware, the Project's Management Consultant, B/PB, has recommended to MHD that the contract continue with the current Section Design Consultant.

MHD currently is reviewing this recommendation, as well as several related matters with B/PB. We expect to resolve these matters by March 15, 1995. At such time we respectfully request that your office begin its technical assistance.

Thank you for attention to this matter.

Sincerely,

For

Peter M. Zuk
Project Director

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095-588

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The Commonwealth of Massachusetts
Office of the Inspector General
One Ashburton Place, Boston, MA 02108

ROBERT A. CERASOLI
INSPECTOR GENERAL

JOHN W. MCCORMACK
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TEL: 727-9140
FAX: 723-3540

June 9, 1995

Peter M. Zuk, Project Director
Central Artery/Tunnel Project
One South Station; Fourth Floor
Boston, Massachusetts 02110

Dear Mr. Zuk:

The purpose of this letter is to convey the findings I presented to you and your staff on April 13, 1995, and to communicate this Office's recommendations in response to your request for technical assistance. As you know, the findings pertain to the performance of DeLeuw Cather & Company (DeLeuw), Bechtel/Parsons Brinckerhoff (B/PB), and MassHighway in their respective roles for the design and management of the Integrated Project Control System (IPCS) design contract, and B/PB's recommendation to accept DeLeuw's proposal to design the I-93 portion (C22A2) of the IPCS. Some of these findings are specific to the IPCS contract and others have project-wide applicability and should be examined by the Project on that basis.

Scope:

The scope of this review covers the period from June 1994 through mid-May 1995. As you know, this Office previously conducted a review for this contract that covered the period from December 1990 through June 1994. The findings are organized into the following categories: DeLeuw's staffing, current performance and proposal to design the I-93 portion (C22A2) of the IPCS; B/PB's management performance including MCN 12-060, PCN 74, and its recommendation to accept DeLeuw's proposal; and MassHighway's performance.

FINDINGS:

DeLeuw's Current Staffing:

1. In violation of its contract, the majority of DeLeuw staff and its largest subconsultant, IBI, staff are part-time and live outside the Boston area.[1] As a result, travel expenses have far exceeded the original amount in the DeLeuw contract. For example, DeLeuw and IBI were allotted approximately $141,000 and $68,000 in their contracts for travel. As of December 31, 1994, $191,358 and $164,527 were invoiced for travel. B/PB's Project staff has stated that design delays have occurred while Project staff waited for DeLeuw and IBI staff to fly to Boston for meetings to discuss design issues or negotiate changes to its contract.

2. Throughout the life of this contract, B/PB has approved merit raises and promotions for DeLeuw staff despite poor performance.

3. The highest paid DeLeuw and IBI employees are part-time and live outside the Boston area. They are exempt from the $38.50 hourly rate and instead make $50.00 (IBI) and $49.04 and $43.39 (DeLeuw).

4. Money is still being transferred within the DeLeuw contract to allow other firms to perform DeLeuw's work. B/PB is being paid through Work Program 12 to perform work DeLeuw was unable to perform.

Recommendations:

1a. Direct B/PB to ensure that DeLeuw complies with the provisions of its contract including use of subconsultants and the requirement that its staff be qualified, Boston-based, and full-time.

1b. Implement steps to immediately limit all travel funds for this contract to travel that is justifiable, not necessitated because staff does not reside and work in the Boston area. Review and correct the deficiencies within B/PB's project management system that allowed travel to far exceed contract limits.

2a. Institute a performance review process and direct B/PB to utilize the management tools it has in DeLeuw's contract to ensure DeLeuw's performance complies with its contract standards.

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[1] MassHighway's response to this Office's IPCS report inaccurately stated that DeLeuw's staffing problems were resolved: "The problem of DeLeuw not relocating the staff to Boston was addressed with DeLeuw. This was rectified and these positions were filled by resident staff in Boston."

MassHighway should establish a projectwide policy for rejection of any merit increases on contracts that are not being performed to contract standards. Include and enforce sanctions for late submittal and substandard performance.

3a. Direct B/PB to review and justify the hourly rate paid for part-time DeLeuw staff.

4a. Investigate why it is necessary for other firms to perform DeLeuw's work and ensure that DeLeuw has performed no less than 50 percent of work as required in its contract.

DeLeuw's Performance:

5. DeLeuw's performance problems, including late submittal of design deliverables, have been consistent over the life of the contract. As of February 1995, DeLeuw's budgeted hours versus actual hours expended show that DeLeuw required more than twice the amount of jobhours for the C22A4 and C22A7 design package, more than 50% additional hours for C22A5 and C22A6 design package and more than 30% additional hours for C22A1.

6. Over the last nine months, DeLeuw's work, although limited, continues to exhibit problems:

- DeLeuw's work for the last nine months has been limited to:

  A. Construction phase services/submittal review process for contractor's submittal. Even in this area, DeLeuw's work has decreased because the contractor (Perini) submitted only 540 of the scheduled 945 submittals.

  B. Very small amount of design work needed to complete small design packages left in the contract that were at the PS & E stage in June 1994. Parts of these designs have been under scrutiny for not conforming to MassHighway, FWHA, and AASHTO requirements.

7. DeLeuw's performance for this design package has exhibited problems including:

- Air rights violations on South Boston Haul Road (October 1994).

- DeLeuw has suggested vendors to the C22A1 contract that were all out of business.

- Despite decreased workload, DeLeuw has been cited (March 21, 1995) for "significantly late" submittals.

As the C22A1 construction continues, there is greater potential for design problems to surface. (Problems arising from design errors and substandard performance are also addressed later in this letter in the analysis of B/PB's role.)

8. The DBE participation set for this contract has serious shortfalls and a recovery plan was necessary. Even under the recovery plan, DeLeuw hired a non-certified DBE firm, violating the Project's policy of hiring only certified firms. (The firm has since been certified.)

Recommendation:

5a. See previous recommendations 1a and 2a.

5b. Investigate the circumstances that have led to DeLeuw's expended jobhours far exceeding the contract jobhours.

6a. MassHighway should include in DeLeuw's contract sanctions for late submittal, substandard performance and failure to meet MassHighway, Federal Highway Administration (FHWA), and AASHTO requirements

7a. MassHighway must hold DeLeuw accountable for performance.

8a. MassHighway must address the DBE problems associated with this contract and hold B/PB and DeLeuw accountable for this situation.

DeLeuw's Proposal[2]:

9. DeLeuw does not meet the qualifications that B/PB developed for competitively procuring new C22A2 design package. Examples of these qualifications include staffing, evidence of past performance, ability to complete projects on schedule and within budget, DBE requirements, demonstrated knowledge of local conditions, and knowledge of MassHighway and FHWA requirements.

10. DeLeuw has proposed one full time employee, a Project Manager, through May 1998. This position is proposed to be funded by PCN 67, construction phase services, but only until July 1996.

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[2] The findings under this section speak to the DeLeuw proposal presented to MassHighway and in no way alter this Office's position, conveyed by the Inspector General in both a March 24, 1995, and May 19, 1995 letter, that a new competitive procurement is required.

11. DeLeuw has gone from three subconsultants performing 41.2% of the work in its original contract to eight subconsultants (three engineering firms) in its current proposal performing an unspecified amount of work. Standard provisions of service contracts include the provision that the consultant, in this case DeLeuw, perform "not less than fifty (50) percent" of the work with its own organization. Because it is unclear what amount of work DeLeuw is actually performing, there is no way to determine if this proposal is in compliance with the provisions.

12. DeLeuw's proposal includes excessive travel due to staff not locating in the Boston area:

80	RT Hartford/Boston
120	RT Toronto/Boston
120	RT Washington/Boston

Recommendations:

9a. See all previous staffing recommendations.

10a. In addition to previously mentioned staffing recommendations, MassHighway must ensure that all DeLeuw's proposals, present and future, contain the necessary information regarding services and funds needed to complete the work.

11a. Require that all proposals to MassHighway contain the percentage of work being performed by the designer and its subconsultants to ensure compliance with contract provisions requiring designers to perform a minimum of 50% of the contract's work.

12a. MassHighway should reject any excessive travel included in proposals to MassHighway and ensure that all travel is justified.

B/PB's Role:

13. B/PB still has not enforced the provisions of DeLeuw's contract for staffing (section 18.0), certification and truthful document filing (sections 34.0 & 34.5), subcontracting (37.0), AA/EEO/DBE (38.0), NTP (special provision), and ROW requirement (3.2.3).

14. B/PB inaccurately informed MassHighway that DeLeuw's staffing problems had been addressed and staff were located in Boston.

15. B/PB still has not documented or justified, as required by the Project's Management Plan, decision making and other critical meetings.

16. B/PB has approved travel requests for hundreds of thousands of dollars for DeLeuw and its subconsultants without adequate justification or capping of expenditures. In addition, travel requests are consistently approved after the travel occurs.

17. B/PB still is not consistent in who it copies at MassHighway. Rather than providing a copy of the actual document, B/PB provides a vague transmittal sheet that does not adequately indicate the referenced documents.

18. B/PB failed to place cost caps, although it repeatedly stated it did, on seven proposed additional services (PCNs) to DeLeuw's contract. One of these services, PCN 46R1 Additional Coordination Budget, was rejected yet $335,000 of $1,244,565 has been spent contrary to state service regulations 801 CMR 20.00.

19. At a time when tighter control should be exercised, B/PB recommended PCN 080 which removed from DeLeuw's contract the following administrative approvals: staffing rosters, approval of hourly rates not in excess of $38.50, promotions, merit increases, direct expenses forecasts, approval of temporary assignments, subconsultant agreements,and subconsultants under direct expenses.

20. B/PB has directed DeLeuw to perform work without the approval or knowledge of MassHighway. For example, B/PB, without approval from MassHighway, directed DeLeuw to combine the C22A5 and C22A6 contract drawings.

21. Without authority from either the DeLeuw or its own contract, B/PB has submitted technical information regarding the C22A2 design to DeLeuw prior to providing MassHighway with the same information. For example, the technical paper "I-93 Furnish and Install Full Build IPCS" was transmitted to MassHighway after it was transmitted to DeLeuw. MassHighway should receive this type of information first and approve both the information and direction to DeLeuw.

22. B/PB provided the preliminary design and approved DeLeuw's design for South Boston Haul Road which resulted in air rights violations.

23. In negotiating DeLeuw's contract in 1990, B/PB removed coordination responsibilities. B/PB was to coordinate the other section design consultant (SDC) interfacing with the IPCS contract. Lack of adequate coordination has been a consistent problem throughout this contract. B/PB now has recommended that DeLeuw receive additional monies, proposed at $2.1 million, for SDC coordination when B/PB already had (and was being paid for) the responsibility in its work program.

24. B/PB has billed thousands of extra jobhours for work on the problems associated with this contract:

- 1000's of jobhours to assist DeLeuw
- Recommendation to Delete/Matrix/Charts/etc.
- MCN to perform work and take scope out of Deleuw's contract
- Recommendation to put work back in
- If work is given back to Deleuw - Support for transition

B/PB's inadequate management has not resulted in any penalties or sanctions by MassHighway.

Recommendations:

13a. MassHighway must direct B/PB to enforce all provisions of DeLeuw's contract including staffing (section 18.0), certification and truthful document filing (section 34.0 & 34.5), subcontracting (37.0), AA/EEO/DBE (38.0), NTP (special provision), and ROW requirement (3.2.3). Sanction B/PB for DeLeuw's violations that are known yet not addressed by B/PB.

14a. MassHighway must review the circumstances that allowed this inaccurate information to be transmitted from B/PB to MassHighway and determine the basis for the inaccuracy.

15a. Require B/PB to document and report the results of these meetings to MassHighway.

16a. MassHighway should direct B/PB to approve only travel requests that can be justified and paid for with existing contract funds. Ensure that all requests have enough information for MassHighway and other oversight authorities to determine the purpose, costs and justification for the travel. Ensure that all travel requests are submitted prior to the actual travel.

17a. MassHighway should direct B/PB to provide copies -- not vague transmittal sheets -- to MassHighway points of contact for the IPCS design.

18a. MassHighway should direct B/PB to ensure that SDC's are not allowed to begin work on services that have not been approved according to state regulations 801 CMR 20.00.

19a. MassHighway should amend DeLeuw's contract to remove PCN 080. Review on a projectwide basis the potential for cost recovery from B/PB for funds placed in Work Program 12 for oversight and coordination of these tasks.

20a. MassHighway should direct B/PB to stop its practice of directing DeLeuw to perform work that has not been approved by MassHighway. Sanction B/PB if these incidents continue.

21a. MassHighway should direct B/PB to ensure that MassHighway reviews and approves any technical information prior to being transmitted to DeLeuw. Hold B/PB accountable for any costs associated with unapproved technical information resulting in design errors or unapproved direction.

22a. Because both B/PB and DeLeuw are contractually responsible for knowing right-of-way restrictions, including air rights, MassHighway must examine both B/PB's preliminary and DeLeuw's final design to determine responsibility for this error. Assess any design and other costs to both B/PB and DeLeuw to correct this problem.

23a. MassHighway must evaluate who has responsibilities for SDC coordination tasks and the extent to which these responsibilities were carried out ineffectively. MassHighway should not pay DeLeuw for responsibilities that are in B/PB's work program.

24a. MassHighway should evaluate the extent to which B/PB has profited by the problems associated with DeLeuw's contract, and take appropriate action.

MCN 12-060:

25. B/PB began work contained in this $1.4 million MCN in July 1994 without approval from MassHighway. It was not until November 1994, that MassHighway approved this MCN.

26. B/PB hired a home office employee, who was not an engineer, to perform an "independent" assessment of the scope of MCN 12-060. The result was a four page document, at a cost of $40,703, that contained no new information, required 72 jobhours to complete and was presented to MassHighway nearly a month after the MCN work had begun. In addition, B/PB did not follow the employee's recommendations in this assessment for economical and practical hiring practices: hire CA/T staff (scheduled to be released during W.P. 12) or local non-CA/T consultants. Instead, B/PB hired home office staff -- including the employee who performed this "independent" assessment and others scheduled to be layed off by B/PB -- at a cost of $618,113 including pay, overhead, and expenses for an approximate seven month period.

27. PB misrepresented the purpose of $181,000 in direct expenses included in this $1.4 million MCN as "Home Office Business Operations" when in fact the funds were strictly for travel expenses. Over 20% of the total MCN amount, excluding funds for Massachusetts Institute of Technology, was for travel and lodging expenses.

28. There is a disproportionate amount of home office jobhours (8,140) versus project office jobhours (3,380) in this MCN.

Recommendations:

25a. MassHighway should direct B/PB not to perform any MCN or other work unless B/PB has been approved by MassHighway.

26a. MassHighway should hold B/PB accountable for the independent assessment and direct it to justify why it did not follow the advice of this "expert." Do not allow B/PB to charge for the "independent" assessment and recover costs for this expensive and unnecessary approach to hiring staff. Conduct an independent project wide review of home office staffing utilized by B/PB and determine: the extent to which staff scheduled to be layed off are utilized; the necessity of the use of home office staff; the home office rate utilized and its relationship to the current payment structure; and the total costs of using home office staff versus local hiring.

27a. MassHighway should hold B/PB accountable for accurate representation of the purpose of funds included in this and other MCN. Establish a policy by which B/PB does not receive payment for misrepresented items.

27b. MassHighway should direct B/PB to include travel cost information and cost caps on all Project travel request forms. Those requests that do not have this information should be rejected.

28a. MassHighway should conduct a projectwide review of B/PB's rate structure to determine how the various rates are utilized.

PCN 74 - Removing C22A2:

29. B/PB's negotiations with DeLeuw to remove the C22A2 scope from DeLeuw's contract resulted in a mere $1,770,000 credit, although only 20% of the $6.5 million scope had been completed. B/PB charged MassHighway $63,000 for this negotiation work.

30. B/PB hired the same home office employee who performed the independent assessment for MCN 12-060 to negotiate a credit with DeLeuw for the removal of the C22A2 design package from DeLeuw's contract. This employee was not an engineer nor had he been assigned to DeLeuw's contract prior to negotiations. MassHighway did not provide direction for this negotiation.

Recommendations:

29a. MassHighway should determine the extent to which the $1,770,000 credit and B/PB's $63,000 charge are justifiable.

30a. MassHighway must ensure that only the best qualified personnel are negotiating on behalf of MassHighway. MassHighway must also provide B/PB with the negotiation direction and approval of any negotiation position, costs and strategy for all significant changes to this contract.

B/PB's Recommendation to Accept DeLeuw's Proposal:

31. DeLeuw does not meet the qualifications that B/PB developed for the bidding of the new C22A2 design package including evidence of past performance, ability to complete projects on schedule and within budget, and DBE requirements.

32. B/PB's basis for its recommendation to keep DeLeuw cannot be supported:

Basis	Reality
- DeLeuw's Corporate commitment	Previous commitments broken
- DeLeuw's Peer Review	No one has seen it
- DeLeuw's New Staff	Still part-time and located outside MA
- B/PB input for DeLeuw's staff	Already in DeLeuw contract
- Cost Savings	No proof it will save money
- Partnering	Partnering can't solve these problems
- Schedule	No proof schedule will improve

33. B/PB's Project Director informed Project Director Zuk that many issues needed to be addressed in DeLeuw's proposal, including DeLeuw's staffing, prior to a recommendation being made by B/PB. B/PB's Project Director stated that proposed staff for the C22A2 design included individuals that were either unacceptable, had duties not related to the new contract, or lacked enough experience. Three months later, a new B/PB Project Director came on board and recommended that the DeLeuw proposal be accepted stating that DeLeuw had addressed staffing problems. The same individuals were still listed as DeLeuw's staff.

Recommendations:

31a. Unless DeLeuw can provide the qualified, full-time, Boston area based staff and guarantees that it is able to get the job done, its proposals should not be entertained and its current contract should be terminated.

32a. MassHighway must ensure that any corporate commitments, deliverables and cost savings are guaranteed contractually by DeLeuw.

33a. See previous staffing recommendations.

MassHighway's Role:

34. MassHighway's management structure and roles of its personnel working on this contract are not clearly defined. MassHighway's failure to identify a single MassHighway employee empowered to direct B/PB has added to the problems associated with this contract including B/PB directing DeLeuw without authorization from MassHighway and lack of action to correct DeLeuw's contract violations.

35. MassHighway directed and paid B/PB to simultaneously proceed in two directions: to remove and reprocure the D022B design work and to add the D022B design work to DeLeuw's contract.

36. MassHighway directed and paid B/PB to simultaneously proceed with PCNs which added and deleted the same work to DeLeuw's contract. (PCN 14R1 and 37R1 were added 12/94 and taken out 1/23/95. PCN 46R1 was in process while it was also being taken out of DeLeuw's C22A2 scope.)

37. MassHighway did not keep FHWA informed of its solicitation by DeLeuw to perform this work nor its consideration of giving this new design package to DeLeuw. At the same time MassHighway was entertaining DeLeuw's proposals, FHWA was sending its approval to have the C22A2 design removed from DeLeuw's contract. Because FHWA must approve changes to contracts and is the major funding source for this project, communication is essential.

38. Contrary to state service contract regulations, 801 CMR 20.00, MassHighway allowed B/PB to bill for services included in MCN 12-060 that had been provided up to four months prior to approval from MassHighway. Most travel requests were approved without any cost information. These requests ultimately resulted in a cost of nearly $136,000 to the Project.

Recommendations:

34a. MassHighway must have a clear structure for its oversight of B/PB. MassHighway must also clearly define the roles of its staff and identify a single MassHighway person empowered to direct and oversee B/PB's management of this contract.

35a. MassHighway must make its decisions first and then direct B/PB to proceed in one cost effective management direction.

36a. See recommendation 35a.

37a. MassHighway must strengthen the lines of communication with FHWA to ensure approval of contract changes and maximum federal funding.

38a. MassHighway must stop the practice of approving B/PB's services after the work has already begun. No service should begin unless proper approvals are given in compliance with state regulations. MassHighway must stop approving travel requests without appropriate cost information.

IPCS Design Costs:

39. The cost to design the IPCS has gone from $10.9 million, not including B/PB's preliminary design costs, to $26 million including DeLeuw's credit to MassHighway:

Original Contract	$10,864.209
MODS 1 - 21	4,105,033
13 Other MODS	1,130,332
13 PCNs	11,621,977 (PLUS PCN 84)
	$27,721,251 +
MOD 26II Credit	- 1,770,000
Total Cost	$25,951,251

40. There is a serious shortfall in the special engineering contingency fund:

Contingency Funds to date:	$7.6 Million
PCN 83 (if approved)	$6.4 Million
Total Funds Placed in Contingency	$14.0 MILLION.

The amount of money needed to pay for work with this fund (past, present, pending Mods) is $16,857,342.

41. Although the contact value is $26+ million B/PB has stated that the cost cap for this contract is be between $15 and $17 million, and will be further reduced by the $1,770,000 credit from DeLeuw.

Recommendations:

39a. MassHighway must initiate steps to control the escalating costs -- caused by both DeLeuw and B/PB -- of this design including reducing the number of changes to and extra work for the IPCS design, more accurate B/PB estimates for changes, more efficient management by B/PB, and a tougher negotiating position.

40a. MassHighway should conduct an audit of the special engineering contingency fund to determine the extent of the shortfall, track the services to funds, and to provide an accurate estimate of total funds needed for the life of this contract. Direct B/PB to ensure that no change is allowed unless funds exist to pay for the work.

41a. MassHighway must examine how this contract exceeded its cap, despite existing financial internal control systems in place and address the weaknesses in the system that allowed this to happen.

I understand that Deputy Project Director Flynn, in a discussion with Wendy Haynes of this Office, stated that the Project has accepted and intends to act on your staff's memorandum, dated May 4, 1995, concerning this Office's findings. I urge you to incorporate this Office's recommendations into your current plan of action. This Office looks forward to the resolution of all findings and commends you and your staff for their responsiveness and cooperation during this review.

Sincerely,

Noreen S. Hazelton

Noreen S. Hazelton, Chief
Contract Audit and Review Division

cc: William Flynn, Deputy Project Director
Sergiu Luchian, Projectwide Engineer
Susan Cobb, Counsel

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Massachusetts Highway Department
Central Artery/Tunnel

September 6, 1996

Office of the Inspector General
One Ashburton Place
John W. McCormack Building Room 1311
Boston, MA 02108

Attn: Ms. Wendy Haynes, Deputy Inspector General for Contract Audit and Review

Dear Ms. Haynes:

I am writing in response to the report sent to us as a result of our technical assistance request relative to the DO22A - Integrated project Control systems (IPCS) Contract. The report's findings cover your office's review of the IPCS contract from June 1994 through June 1995.

Most importantly, We would like to commend your staff for its work on this contract. As you know, the findings and recommendations presented were quite lengthy. Out of respect for the thoroughness of your review, we have taken the time to review each finding, consider each recommendation carefully, and respond accordingly. Please see the attached responses to findings and recommendations.

The Project continues to believe that executing an amendment to the DO22A contract and working with DeLeuw Cather & Co. as the IPCS design consultant was a sound management decision and in accordance with 801 CAR 20.00, the Commonwealth's Service Contract Regulations. Because DeLeuw has carefully addressed the performance issues raised by the Project and confirmed by your office, the project continues to believe that DeLeuw is well qualified to perform the work and that reprocurement of a new consultant would result in a greater final cost to the Commonwealth.

One South Station • Boston • Massachusetts • 02110 • Phone 617-951-6000 • Fax 617-951-0897

Again, we appreciate the thorough-going nature of your response to our request for technical assistance. If you have any questions regarding our responses, please call me at 342-1147.

Sincerely,

MASSACHUSETTS HIGHWAY DEPARTMENT

James F. Cashman
Director of Operations

O96-1196
AD-2.4.1

Responses to Findings and Recommendations - to 06/09/95 Letter

Findings:

Subject: DeLeuw's Current Staffing

1. In violation of its contract, the majority DeLeuw staff and its largest subconsultant, IBI, staff are part-time and live outside the Boston area[1]. As a result, travel expenses have far exceeded the original amount in the contract. For example, DeLeuw and IBI were allocated approximately $141,000.00 and $68,000.00 in their contracts for travel. As of December 31, 1994, $191,358.00 and $164,527.00 were invoiced for travel. B/PB's Project staff has stated that design delays have occurred while Project staff waited for DeLeuw and IBI staff to fly to Boston for meetings to discuss design issues, or negotiate changes to its contract.

Response to Finding 1:

For the sake of clarification, Section 18.0 of the Standar Provision of Service Contracts states, in part,: "...the consultant shall maintain an office located within the confines of the Greater Boston Metropolitan Area. It is required that a majority of the Consultant services effort, as measured by total jobhours, shall be performed at or from that office by staff personnel assigned to that office. Consultants Project Manager and other key personnel with major areas of responsibility for the services must be assigned full time to this local office." Please note that employees assigned to the local office are not eligible for per diem. Since the Project Manager and key personnel are assigned to the local office, and since the majority of the work is being performed at or from the local office, we believe that DeLeuw is fulfilling the requirements of this section of the contract.

MassHighway's response to this Office's IPCS report inaccurately stated that DeLeuw's staffing problems were resolved: "The problem of DeLeuw not relocating staff to Boston was addressed with DeLeuw. This was rectified and these positions were filed by resident staff in Boston".

2. Throughout the life of this contract, B/PB has approved merit raises and promotions for DeLeuw staff despite poor performance.

Response to Finding 2:

Section 7.1.1 of the Standard Provisions of Services Contracts starts, in part,: "Salary rates to employees assigned to this Project shall be commensurate with salaries paid to other employees of the Consultant engaged in similar work", it further states "Any increase in salary for Consultants and its Subconsultant's employees assigned to the service will be the result of a company-wide evaluation of employees and shall be in accordance with company-wide personnel policies of the Consultant and its Subconsultants." This section of the contract also specifies the right of the Department through the Management Consultant to review and approve salaries and increases noting that "unless the Management Consultant on behalf of the Department notifies the Consultant in writing...that such salary rate or increase is, in its opinion, unreasonable, such lack of notice shall constitute approval of the rate or increase..."

The intent of these sections of the contract is to ensure that salaries are commensurate with the work performed. Through review of the initial roster and subsequent revisions, we believe that the salaries paid to staff on this Project are appropriate for the work performed.

Both the Department and its Management Consultant have discussed performance with both DeLeuw Project and Corporate management. Based on these discussions, DeLeuw has made personnel and staffing changes which have resulted in improved performance. Further, in order to assure close attention to performance related issues, the Project has instituted a series of regularly scheduled meetings between the Department, the Management Consultant, and DeLeuw Project and Corporate Management to review DeLeuw's performance and to resolve issues as they arise.

3. The highest paid DeLeuw and IBI employees are part-time and

live outside the Boston area. They are exempt from the $38.50 hourly rate and instead make $50.00 (IBI) and $49.04 and $43.39 (DeLeuw).

Response to Finding 3:

The "highest paid employees" referred to are all full-time employees of the Consultant or its Subconsultant. The salary rates of these employees and the requisite exception to the $38.50 hourly rate cap, have been approved by the Department as being commensurate with their position on the Project and the work they are performing. We believe that the provisions of Section 18 of the Standard Provision of Service Contracts is being complied with. It is our understanding that there is no requirement that these individuals live within the Boston Area.

4. Money is still being transferred within the DeLeuw contract to allow other firms to perform DeLeuw's work. B/PB is being paid through Work Program 12 to perform work DeLeuw was unable to perform.

Response to Finding 4:

Our review has confirmed that all transfers of work within the contract are being done to satisfy the DBE goals of the contract. In response to a Project request to re-evaluate how the work on this contract could be done in a manner that would allow for the DBE goal of 11.3 % to be achieved, DeLeuw prepared a Recovery Plan identifying work which could be shifted from them to a qualified DBE firm. This Recovery Plan was presented to B/PB and the Department for review and concurrence. The plan identified specific DBE firms, specific scopes of work to be performed by the DBE firm and showed that, under the terms of the Plan, DeLeuw maintained its contractual requirement to perform at least 50% of the work.

DBE goals in contracts is of prime concern to the Department and the Recovery Plan presented allowed DeLeuw to maximize the utilization of DBE firms to perform the remaining work while meeting their contractual requirements. The

Department accepted the Recovery Plan and DeLeuw transferred work in accordance with the Plan to qualified DBE's.

Regarding B/PB doing work that DeLeuw was unable to perform, we believe that the only instance where this occurred was when B/PB undertook design responsibility for theC22A2 contract under MCN 1260. At that time, PCN 74 was written and the value of this work was deducted from the DeLeuw contract.

Recommendations:

1a. Direct B/PB to ensure that DeLeuw complies with the provisions of its contract including use of subconsultants and the requirement that its staff be qualified, Boston-based, and full-time.

Response to Recommendation 1a:

B/PB monitors the performance of SDC Contracts through analysis of Consultant Progress and Performance Reports, DBE Monthly Activity Report, Monthly Employment Utilization Report, invoices, Construction Phase Services Report, etc; as well as through on-board reviews and regular meetings with the SDC. In addition, for the DeLeuw contract, monthly senior management review meetings and quarterly executive management meetings are now held to assess performance.

1b. Implement steps to immediately limit all travel funds for this contract to travel that is justifiable, not necessitated because staff does not reside and work in the Boston area. Review and correct the deficiencies within B/PB's project management system that allowed travel to far exceed contract limits.

Response to Recommendation 1b:

For the sake of clarification, reimbursable travel is limited to those individuals not assigned to Project activities in the local office. Travel costs for staff assigned permanently to the local office is considered incidental and non-reimbursable.

To ensure the correction of these types of deficiencies, project procedures require that all reimbursable travel must have a Travel Request Form approved by the Project prior to the cost being incurred. This requirement has been reinforced with DeLeuw through a series of Senior Management meetings.

2a. Institute a performance review process and direct B/PB to utilize the management tools it has in DeLeuw's contract to ensure DeLeuw's performance complies with its contract standards.

Response to Recommendation 2a:

Please refer to response to Finding 2. Contractual sanctions will be imposed for late submittals and substandard performance when deemed appropriate by Project management.

2b. MassHighway should establish a projectwide policy for rejection of any merit increase on contracts that are not being performed to contact standards. Include and enforce sanctions for late submittal and substandard performance.

Response to Recommendation 2a:

Please refer to Response to Finding 2.

3a. Direct B/PB to review and justify the hourly rate paid for part-time DeLeuw staff.

Response to Recommendation 3a:

Please refer to Response to Finding 3.

4a. Investigate why it is necessary for other firms to perform DeLeuw's work and ensure that DeLeuw has performed no less than fifty percent (50%) of work as required in its contract.

Response to Recommendation 4a:

Please refer to Response to Finding 4.

Subject: DeLeuw's Performance

5. DeLeuw's performance problems, including late submittal of design deliverables, have been consistent over the life of the contract. As of February 1995, DeLeuw's budgeted hours versus actual hours expended show that DeLeuw required more than twice the amount of jobhours for the C22A4 and C22A7 design package, more than fifty percent (50%) additional hours for C22A5 and C22A6 design package and more than thirty percent (30%) additional hours for C22A1.

Response to Finding 5:

DeLeuw's performance problems, such as late submittals and incomplete documentation, have been adequately addressed with DeLeuw. The performance of its project team continues to improve. We are closely monitoring their progress.

6. Over the last nine (9) months, DeLeuw's work, although limited, continues to exhibit problems:

DeLeuw's work for the last nine (9) months has been limited to:
a. Construction phase services/submittal review process for contractor's submittal. Even in this area, DeLeuw's work has decreased because the contractor (Perini) submitted only 540 of the scheduled 945 submittals.

Response to Finding 6a:

We agree that the contractor only made approximately 60% of the scheduled submittals. These submittals are not being received on a regular basis, but rather on an irregular basis in bunches. Because of this, DeLeuw was constantly asked to change priorities as to which submittals needed priority attention. They were also asked to reduce turnaround time from the 21 days allowed in its contract to 14 days. DeLeuw has been very responsive in regards to this. On some critical submittals, turnaround time has been as short as two to three days.

b. Very small amount of design work needed to complete small design packages left in the contract that were at the PS&E stage in June 1994. Parts of these designs have been under scrutiny for not conforming to MassHighway, FHWA and AASHTO requirements.

Response to Finding 6b:

DeLeuw's design work for the IOC contracts has been completed. The design was modified based on outside reviews by both the Massachusetts Turnpike Authority (the eventual owner and operator) and the Massachusetts Highway Department to accommodate specific changes requested by those agencies. In some cases, local agency requirements differed from Project standard requirements. All designs are scrutinized to assure conformance to FHWA and AASHTO requirements.

7. DeLeuw's performance for this design package has exhibited problems including:

a. Air rights violations on South Boston Haul Road (October 1994).

Response to Finding 7a:

We agree that in DeLeuw's original design for the South Boston Haul Road, certain elements violated a vertical air rights restriction that was imposed on a portion of that roadway as part of taking agreement. When notified of this issue, DeLeuw produced a revised design that conformed with the air rights restriction within a week of notification. This re-work was accomplished at no cost to the Department and the quick turnaround resulted in no adverse construction input.

b. DeLeuw has suggested vendors to the C22A1 contract that were all out of business.

Response to Finding 7b:

Vendors and suppliers who are used by an SDC to establish the definition of "off-the-shelf" products and representative costs are selected prior to the 100% design completion. Our experience is that it is not unusual for some to be out of business or to have refocused their markets in the interim. In some areas, such as loop detectors, the market is very small and leading suppliers have gone out of business or changed ownership.

c. Despite decreased workload, DeLeuw has been cited (March 21, 1995) for "significantly late" submittals. As the C22A1 construction continues, there is greater potential for design problems to surface. (Problems arising from design errors and substandard performance are also addressed later in this letter in the analysis of B/PB's role).

Response to Finding 7c:

The Project did write to DeLeuw on March 21, 1995, regarding outstanding reviews of submittals. However, we believe that the intent of our March 21, 1995, correspondence may have been misinterpreted. This memorandum from the Resident Engineer contains a matrix that tracks some 56 submittals and re-submittals and for sign support structures, but notes that three were outstanding. Of these, one had been transmitted to DeLeuw nine days before the memorandum and another 27 days before the memorandum was issued. Since the contractual requirement is for submittals to be reviewed and returned in 21 days, these are not considered to be "significantly overdue". The third submittal discussed was transmitted to DeLeuw 34 days before the memorandum. While this does go beyond the contractual time frame, the time is not "significantly" beyond the expected time.

8. The DBE participation set for this contract has serious shortfalls and a recovery plan was necessary. Even under the recovery plan, DeLeuw hired a non-certified DBE firm, violating the Project's policy of hiring only certified

firms. (The firm has since been certified).

Response to Finding 8:

At the time that DeLeuw proposed the Recovery Plan to B/PB and the Department, it was known that one of its proposed DBE firms was not certified. That firm met the requirement for certification and had submitted the requisite paper work, but was waiting formal response. DeLeuw had not, at that time, "hired" this firm, but had proposed it as part of the Recovery Plan. Subsequently, the firm was certified and the Recovery Plan accepted. Only after these events transpired did DeLeuw contract with the proposed DBE firm to perform work in accordance with the Recovery Plan.

Recommendations:

5a. See previous recommendations 1A and 2A.

Response to Recommendation 5a:

Please see responses to these previous recommendations.

5b. Investigate the circumstances that have led to DeLeuw's expended jobhours far exceeding the contract jobhours.

Response to Recommendation 5b:

In October, 1994, B/PB conducted a thorough review of the DeLeuw contract including jobhour expenditure. The results of that review were shared with the Department and resulted in a recommendation to remove a portion of work from the contract scope. In response to this recommendation, DeLeuw made personnel and management changes which have resulted in improved productivity and quality. We believe that hours expended are now appropriate for the work involved.

6a. MassHighway should include in DeLeuw's contract sanctions for late submittal, substandard performance and failure to meet MassHighway, Federal Highway Administration (FHWA), and AASHTO requirements.

Response to Recommendation 6a:

Please refer to Response to Finding 6a.

7a. MassHighway must hold DeLeuw accountable for performance.

Response to Recommendation 7a:

We agree. The Department must hold all consultants and contractors accountable for their performance. We believe that DeLeuw's performance problems have been dealt with judiciously.

8a. MassHighway must address the DBE problems associated with this contract and hold B/PB and DeLeuw accountable for this situation.

Response to Recommendation 8a:

The provisions relative to the DBE goal of this contract are stipulated in the Recovery Plan developed by DeLeuw. This plan has been approved by both B/PB and ID. DeLeuw continues to make progress towards the DBE goal for this contract in accordance with the Recovery Plan.

Subject: DeLeuw's Proposal

9. DeLeuw does not meet the qualifications that B/PB developed for competitively procuring new C22A2 design package. Examples of these qualifications include staffing, evidence of past performance, ability to complete projects on schedule and within budget, DBE requirements, demonstrated knowledge of local conditions and knowledge of MassHighway and FHWA requirements.

Response to Finding 9:

From the Project's perspective, DeLeuw was qualified to perform the work. The key issue was assigning adequate and qualified staff. DeLeuw's proposal was carefully reviewed in terms of performance, schedule, scope, and staff capability. In our estimation, subsequent reviews have confirmed the decision to accept the DeLeuw proposal based upon DeLeuw's qualifications to perform the work and the revised management team. Since that time, DeLeuw's performance is consistent with their contractual commitments.

10. DeLeuw has proposed one full time employee, a Project Manager, through May 1998. This position is proposed to be funded by PCN 67, construction phase services, but only until July 1996.

Response to Finding 10:

This statement is correct, but appears to confuse two elements of DeLeuw's work. The Project Manager position contained in DeLeuw's proposal is specifically related to Full Build IPCS Final Design activities (C22A2). The Project Manager position proposed to be funded by PCN-067 is related solely to I-90 IPCS construction phase services activities (C22A1). These sources combine to fund the project manager position for the duration of the DeLeuw contract.

11. DeLeuw has gone from three (3) subconsultants performing 41.2% of the work in its original contract to eight (8) subconsultants (engineering firms) in its current proposal performing an unspecified amount of work. Standard provisions of service contracts include the provision that the consultant, in this case DeLeuw, perform "not less than fifty percent (50%)" of the work with its own organization. Because it is unclear what amount of work DeLeuw is actually performing, there is no way to determine if this proposal is in compliance with the provisions.

Response to Finding 11:

As noted earlier, DeLeuw revised its approach to the work in response to a request from the Project to increase the use of DBE firms. All of the subconsultants proposed by DeLeuw are technically qualified to perform the services and are certified DBE firms. In evaluating the proposal, it was understood that DeLeuw had a contractual requirement to perform at least 50% of the work. This point was discussed with DeLeuw and the job hour spread sheet reflects this requirement.

12. DeLeuw's proposal includes excessive travel due to staff not located in the Boston area:

80	RT	Hartford/Boston
120	RT	Toronto/Boston
120	RT	Washington/Boston

Response to Finding 12:

In the DeLeuw proposal, reimbursable travel costs over the life of the services comprise approximately 10% of direct expenses and less than 1% of total project cost. In our estimation, this is not excessive.

Recommendations:

9a. See all previous staffing recommendations.

Response to Recommendation 9a:

Please see previous responses to staffing recommendations.

10a. In addition to previously mentioned staffing recommendations, MassHighway must ensure that all DeLeuw's proposals, present and future, contain the necessary information regarding services and funds needed to complete the work.

Response to Recommendation 10a:

Agree. The Department is confident that contracts with DeLeuw contain all necessary information regarding services and funding.

11a. Require that all proposals to MassHighway contain the percentage of work being performed by the designer and its subconsultants to ensure compliance with contract provisions requiring designers to perform a minimum of fifty percent (50%) of the contract's work.

Response to Recommendation 11a:

Agree. We will require that all subsequent proposals clearly depict the percentage of work being done by the Section Design Consultant and its subconsultants to ensure adherence to contract requirements.

12a. MassHighway should reject any excessive travel included in proposals to MassHighway and ensure that all travel is justified.

Response to Recommendation 12a:

Agree. All elements of consultant proposals will be carefully reviewed, including proposed travel budgets.

Subject: B/PB's Role

13. B/PB still has not enforced the provisions of DeLeuw's contract for staffing (section 18.0), certification and truthful document filing (sections 34.0 & 34.5), subcontracting (37.0), AA/EEO/DBE (38.0), NTP (special provision), and ROW requirement (3.2.3).

Response to Finding 13:

We believe that B/PB has attempted to enforce all provisions of the contract. Where exceptions have occurred, B/PB has notified the SDC and established programs to correct the issues, where appropriate. Please refer to previous responses regarding specific contract sections in more detail.

14. B/PB inaccurately informed MassHighway that DeLeuw's

staffing problems had been addressed and staff were located in Boston.

Response to Finding 14:

Please refer to Response to Finding 2. B/PB believes that MHD was kept informed of staffing concerns as they arose. Recently inaugurated management reviews will assure better communication among all parties on personnel and other key IPCS related issues.

15. B/PB still has not documented or justified, as required by the Project's Management Plan, decision making and other critical meetings.

Response to Finding 15:

The majority of past meetings were documented. However, in some cases, minutes were inadvertently neither taken nor distributed to MHD. B/PB has taken steps to assure that this process is corrected. In addition, the joint MHD-B/PB-DeLeuw management meetings will provide improved oversight of the communication process.

16. B/PB has approved travel request for hundreds of thousands of dollars for DeLeuw and its subconsultants without adequate justification or capping of expenditures. In addition, travel requests are consistently approved after the travel occurs.

Response to Finding 16:

We believe this finding requires clarification. In B/PB's estimation, they never approved any Travel Requests without adequate justification. Please note that the lengthy delay in issuing NTP on this contract severely impacted Deleuw's ability to maintain an appropriate work force on "standby". In order to accommodate the Project's desire to move forward quickly once NTP was issued, the SDC brought appropriate technical personnel to the Project on a temporary basis until permanent staffing could be established. As noted in our response to recommendation 1b, travel approval procedures have been strengthened to assure better management.

17. B/PB still is not consistent in who it copies at MassHighway. Rather than providing a copy of the actual document, B/PB provides a vague transmittal sheet that does not adequately indicate the referenced documents.

Response to Finding 17:

Distribution practices are established with the concurrence of the MHD to assure notification while minimizing unnecessary copies. Transmittals are copied with all attachments based on requirements. The PE (or authoring department) retains all copies so that a copy is available to be read or recopied in the event that an individual wants to see the details of the transmittal. Recognizing that errors have occured in distribution, additional attention is being placed on assuring proper distribution.

18. B/PB failed to place cost caps, although it repeated stated it did, on seven proposed additional services (PCNs) to DeLeuw's contract. One of these services, PCN 46R1 Additional Coordination Budget, was rejected yet $335,000.00 of $1,244,565.00 has been spent contrary to state service regulations 801 CMR 20.00.

Response to Finding 18:

PCNs 46R1, 55, 56, and 66 were issued prior to NTP and therefore did not require cost caps. PCN 53 was a claim which was rejected. A cost cap of $27,425 was included in the NTP for PCN 59R1. NTP was given for PCN 74, which was a notice to stop work and stop incurring costs relating to original contract scope. When PCN 74 (deletion of the C22A2 scope of work) was negotiated, the settlement recommended to the Department included subtracting $335,000 for coordination work performed by B/PB, the credit that DeLeuw owed the Project. This was done in order to close out all issues related to C22A2 scope of work in the PCN 74 settlement.

19. At a time when tighter control should be exercised, B/PB recommended PCN 080 which removed from DeLeuw's contract the following administrative approvals: staffing rosters, approval of hourly rates not in excess of $38.50, promotions, merit increases, direct expenses forecasts, approval of temporary assignments, subconsultant agreements, and subconsultants under direct expenses.

Response to Finding 19:

PCN 080 was not unique to the D022A SDC contract. This PCN eliminated a number of administrative approvals which were required to be submitted to MHD for approval. This was done primarily as a cost containment measure on all SDC contracts. The purpose for the elimination of these approvals was not to lessen the control that B/PB exercises over this or any other SDC contract. Its intent was to lessen the amount of paperwork and related costs associated with administering SDC contracts.

20. B/PB has directed DeLeuw to perform work without the approval or knowledge of MassHighway. For example, B/PB, without approval from MassHighway, directed DeLeuw to combine the C22A5 and C22A6 contract drawings.

Response to Finding 20:

To the best of our knowledge, B/PB has not directed DeLeuw to perform any work without MHD approval. In regards to combining the C22A5 and C22A6 Contracts, these were originally separated as it was felt that one would be ready to bid substantially before the other. However, as work progressed, it became apparent that both packages would be finalized in the same time frame. The construction of these packages, to save the cost of separate advertisements and preclude delays to allow appropriate bidding, was approved by MHD.

21. Without authority from either the DeLeuw or its own

contract, B/PB has submitted technical information regarding the C22A2 design to DeLeuw prior to providing MassHighway with the same information. For example, the technical paper "I-93 Furnish and Install Full Build IPCS" was transmitted to MassHighway after it was transmitted to DeLeuw. MassHighway should receive this type of information first and approve both the information and direction to DeLeuw.

Response to Finding 21:

In general, design scope and direction are provided to the SDC after review and approval by the Department. In this case, the scope document "I-93 Furnish and Install Full Build IPCS was provided to the Department in draft, although as an attachment to a memorandum. The document was based on a scope matrix which had been thoroughly reviewed and approved by the Department and B/PB. A draft of this document was provided to DeLeuw to provide them with a detailed understanding of the scope to be undertaken if MHD accepted their offer to perform Full Build IPCS design services. This was done in support of an MHD directed technical conversation which was underway between DeLeuw and the Project. We fully concur that MHD must receive and approve all scope and direction prior to its formal submission to the SDC.

22. B/PB provided the preliminary design and approval of DeLeuw's design for South Boston Haul Road which resulted in air rights violations.

Response to Finding 22:

Agree. B/PB provided the preliminary design and right of way documents to DeLeuw for the South Boston Haul Road IPCS design. The right of way documents showed the existing right of way prohibitions. DeLeuw placed several CCTV cameras at pole heights which violated the existing air rights of the adjacent landholder. When informed of this during a subsequent design review, DeLeuw redesigned the camera system within height constraints at no additional cost to the Project. Also, there was no Project schedule impact due to this redesign effort.

23. In negotiating DeLeuw's contract in 1990, B/PB removed coordination responsibilities. B/PB was to coordinate the other section design consultant (SDC) interfacing with the IPCS contract. Lack of adequate coordination has been a consistent problem throughout this contract. B/PB now has recommended that DeLeuw receive additional monies, proposed at $2.1 million for SDC coordination when B/PB already had (and was being paid for) the responsibility in its work program.

Response to Finding 23:

We believe this finding requires clarification. During the negotiation of the original D022A contract, B/PB did not remove coordination responsibilities from DeLeuw's contract. As noted in negotiation records, the negotiation only reduced DeLeuw's responsibility to attend all Project meetings in order to keep track of any potential changes to IPCS infrastructure. (The DeLeuw design team's original proposal included DeLeuw and several of its subcontractors attending all meetings, a significant expenditure of jobhours.) Instead, the Project agreed that its own design engineers would document these meetings and notify DeLeuw of key coordination meetings which it must attend. DeLeuw retained the responsibility to attend and respond to these meetings and to initiate all meetings with the other SDCs when they were introducing or changing IPCS elements. The additional $2.1 million for coordination was for a separate schedule extension. However, the Project does concur that a more effective program of tracking and coordinating the IPCS infrastructure is important. This is a key element of DeLeuw's proposal for the Full Build IPCS program and will be diligently managed by DeLeuw and the Project.

24. B/PB has billed thousands of extra jobhours for work on the problems associated with this contract:

- Thousands of jobhours to assist DeLeuw
- Recommendation to Delete/Matrix/Charts/etc.
- MCN to perform work and take scope out of DeLeuw's contract

- Recommendation to put work back in
- If work is given back to DeLeuw - Support for transition

B/PB's inadequate management has not resulted in any penalties or sanctions by MassHighway.

Response to Finding 24:

The following information is provided to clarify the efforts that B/PB undertook at MHD's direction to reprocure the IPCS' Full Build design (tentatively titled D022B). First, after reviewing the performance issues and scope redefinition required, MHD concurred with the decision to stop DeLeuw's work on the Full Build IPCS design. Further, via an MCN, MHD directed B/PB to reprocure the design and to perform infrastructure design and coordination in lieu of the final designer during the reprocurement. Finally, the "thousands of hours" were understood during MHD's deliberations in making this critical decision, and the final MCN fully reviewed during negotiation. The decision to accept DeLeuw's offer was carefully made by MHD, at which time, B/PB terminated the MCN, with over a thousand hours unspent.

Recommendations:

13a. MassHighway must direct B/PB to enforce all provisions of DeLeuw's contract including staffing (section 18.0), certification and truthful document filing (section 34.0 & 34.5), subcontracting (37.0), AA/EEO/DBE (38.0) NTP (special provision), and ROW requirement (3.2.3). Sanction B/PB for DeLeuw's violations that are known, yet not addressed by B/PB.

Response to Recommendation 13a:

Please refer to the response to Finding 13. There are no known violations of contract provisions which B/PB has not yet addressed with DeLeuw.

14a. MassHighway must review the circumstances that allowed this inaccurate information to be transmitted from B/PB to MassHighway and determine the basis for the inaccuracy.

Response to Recommendation 14a:

Please refer to Response to Finding 2

and 14.

15a. Require B/PB to document and report the results of these meetings to MassHighway.

Response to Recommendation 15a:

Agree. Meetings will be documented and minutes recorded. MHD will be copied.

16a. MassHighway should direct B/PB to approve only travel requests that can be justified and paid for with existing contract funds. Ensure that all requests have enough information for MassHighway and other oversight authorities to determine the purpose, costs and justification for the travel. Ensure that all travel requests are submitted prior to the actual travel.

Response to Recommendation 16a:

Please refer to the response to Finding 16. B/PB has committed to ensuring that all Travel Requests are justified and all required documentation is provided prior to actual travel dates.

17a. MassHighway should direct B/PB to provide copies - not vague transmittal sheets - to MassHighway points of contact for the IPCS design.

Response to Recommendation 17a:

Please refer to Response to Finding 17.

18a. MassHighway should direct B/PB to ensure that SDCs are not allowed to begin work on services that have not been approved according to state regulations 801 CMR 20.00.

Response to Recommendation 18a:

Please refer to the response to Finding 18. B/PB will continue to ensure that the SDC does not begin any work associated with PCNs until appropriate funding is in place and formal Notice to Proceed has been received from MHD.

19a. MassHighway should amend DeLeuw's contract to remove PCN 080. Review on a projectwide basis the potential basis for cost recovery from B/PB for funds placed in Work Program 12 for oversight and coordination of these tasks.

Response to Recommendation 19a:

Please refer to the response to Finding 19. The content of PCN-080 was based on a cost containment recommendation which was accepted by MHD. It directed B/PB to implement its recommendations on all SDC contracts. At the time the recommendation was made, appropriate savings in the administration of SDC contracts were identified. Due to the recommendation process followed, we see no basis for cost recovery.

20a. MassHighway should direct B/PB to stop its practice of directing DeLeuw to perform work that has not been approved by MassHighway. Sanction B/PB is these incidents continue.

Response to Recommendation 20a:

Please refer to Response to Finding 20.

21a. MassHighway should direct B/PB to ensure that MassHighway reviews and approves any technical information prior to being transmitted to DeLeuw. Hold B/PB accountable for any costs associated with unapproved technical information resulting in design errors or unapproved direction.

Response to Recommendation 21a:

We fully concur that MHD should receive, review and approve scope and direction prior to formal submission to the SDC.

22a. Because both B/PB and DeLeuw are contractually responsible for knowing right-of-way restrictions, including air rights, MassHighway must examine both B/PB's preliminary and DeLeuw's final design to determine responsibility for this error. Assess any design and other costs to both B/PB and DeLeuw to correct this problem.

Response to Recommendation 22a:

Please refer to Response to Finding 22.

23a. MassHighway must evaluate who has responsibilities for SDC coordination tasks and the extent to which these responsibilities were carried out effectively. MassHighway should not pay DeLeuw for responsibilities that are in B/PB's work program.

Response to Recommendation 23a:

Please refer to Response to Finding 23.

24a. MassHighway should evaluate the extent to which B/PB has profited by the problems associated with DeLeuw's contract, and take appropriate action.

Response to Recommendation 24a:

Please refer to Response to Finding 24. B/PB has not profited by the problems associated with DeLeuw's contract. At MHD's direction, B/PB performed satisfactorily in the absence of the D022A SDC, updated the IPCS preliminary design, and led the reprocurement effort.

Subject: MCN 12-060

25. B/PB began work contained in this $1.4 million MCN in July 1994 without approval from MassHighway. It was not until November 1994, that MassHighway approved this MCN.

Response to Finding 25:

At the end of July 1994, at the direction of MHD, B/PB assumed responsibility for IPCS infrastructure design and coordination. This was done in parallel with direction to DeLeuw to stop work on Final Build IPCS design. This is outlined in correspondence documenting the results of meetings with MHD. MHD demonstrated its agreement by approving travel requests for the initial team assembled to support the development of the reprocurement program. Although the MCN was not completely negotiated and signed until November, the infrastructure design effort, IPCS preliminary design update program and reprocurement program were carefully directed to grow to the negotiated level of effort during this period in order to avoid Project schedule impact.

26. B/PB hired a home office employee, who was not an engineer, to perform an "independent assessment of the scope of MCN 12-060. The result was a four page document, at a cost of $40,703.00, that contained no new information, required seventy-two (72) jobhours to complete, and was presented to MassHighway nearly a month after the MCN work had begun. In addition, B/PB did not follow the employee's recommendations in this assessment for economical and practical hiring practices: hire CA/T staff scheduled to be released during WP12, or local non-CA/T consultants. Instead, B/PB hired home office staff- including the employee who performed this "independent" assessment and others scheduled to be laid-off by B/PB - at a cost of $618,113.00 including pay, overhead, and expenses for an approximate seven (7) month period.

Response to Finding 26:

The staffing of the MCN effort, including identification of the contract specialist for the independent assessment, was done with MHD approval. The contract specialist who performed the independent assessment, although not an engineer, had experience in contract administration and transportation contract assessment. His temporary assignment was approved by MHD. Please note that over half of the team assembled to do the redesign and reprocurement were existing Project staff who were not included in the MCN because they were already in the WP12 budget. B/PB did explore local hiring options and available staff before mobilizing home office staff to complete this team. At the request of MHD, B/PB revisited this effort, including local advertising, with no success. Contrary to the implication that these individuals were about to be laid off, the Project released all but two of these individuals to pressing assignments in other parts of the country.

27. B/PB misrepresented the purpose of $181,000.00 in direct expenses including in this $1.4 million MCN as "Home Office Business Operations" when in fact the funds were strictly for travel expenses. Over 20% of the total MCN amount, excluding funds for Massachusetts Institute of Technology, was for travel and lodging expenses.

Response to Finding 27:

We do not believe that B/PB misrepresented the purpose of the travel and lodging budget. This budget was reviewed and approved by MHD in detailed spreadsheet format. Travel and lodging were consistent with Project policy and efficient in terms of travel, room and board actuals expended. The efficiencies of 30-day advance travel was shown in the budget detail. The accounting line item title "Home Office Business Operations" was not clear. However, MHD clearly understood it to be travel and lodging during negotiations and subsequent cost tracking.

28. There is a disproportionate amount of home office jobhours

(8,140) versus project office jobhours (3,380) in this MCN.

Response to Finding 28:

In our estimation, the intense effort required for D022B reprocurement and IPCS preliminary design update, dictated that the Project employ a preponderance of temporary staff. Given the parallel pressures of THT construction and I-93 and I-90 design, we believe that the Project was justified since the Project could not redirect that many permanent staff to this effort. One of the benefits which MHD can draw on with B/PB is the resources available from their home offices. This reservoir provides the Project with the ability to respond to sudden needs without impacting schedule.

Recommendations:

25a. MassHighway should direct B/PB not to perform any MCN or other work unless B/PB has been approved by MassHighway.

Response to Recommendation 25a:

Agree in principal with this recommendation. It is the continuing Project position that B/PB only proceed with MCN effort with the express approval of MHD.

26a. MassHighway should hold B/PB accountable for the independent assessment and direct it to justify why it did not follow the advice of this "expert". Do not allow B/PB to charge for the "independent" assessment and recover costs for this expensive and unnecessary approach to hiring staff. Conduct an independent projectwide review of home office staffing utilized by B/PB and determine: the extent to which staff scheduled to be laid-off are utilized; the necessity of the use of home office staff; the home office rate utilized and its relationship to the current payment structure; and the total costs of using home office staff versus local hiring.

Response to Recommendation 26a:

Please refer to the response to Finding 26. We believe that B/PB did follow the advice in the independent assessment, although agreeing with MHD to hold staffing to an overall lower level. As pointed out in the response to Finding 25, B/PB mobilized an effective team and met MHD's directed objectives without schedule impact. This was done after assessing local resources, and existing Project staff.

27a. MassHighway should hold B/PB accountable for accurate representation of the purpose of funds included in this and other MCNs. Establish a policy by which B/PB does not receive payment for misrepresented items.

Response to Recommendation 27a:

Please refer to Response to Finding 27. We believe that B/PB reflected travel costs on travel requests during this period. This process was refined during this MCN period to show that the expenditures were within the approved levels at each stage prior to completion of MCN negotiation. Once negotiated, travel and lodging expenses were tracked to ensure that they were at or below the negotiated levels. B/PB continues to follow these practices.

27b. MassHighway should direct B/PB to include travel cost information and cost caps on all Project travel request forms. Those requests that do not have this information should be rejected.

Response to Recommendation 27b:

Please refer to Response to Finding 27.

28a. MassHighway should conduct a projectwide review of B/PB's rate structure to determine how the various rates are utilized.

Response to Recommendation 28a:

For the sake of clarification, B/PB's rates, both project and home office, are established in the Contract. The rates are negotiated for each Work Program. These rates are audited by MHD.

Subject: PCN 74 Removing C22A2

29. B/PB's negotiations with DeLeuw to remove C22A2 scope from DeLeuw's contract resulted in a mere $1,770,000.00 credit, although only twenty percent (20%) of the $6.5 million scope had been completed. B/PB charged MassHighway $63,000.00 for this negotiation work.

Response to Finding 29:

The original scope of work for D022A included essentially two major work efforts. These are the C22A1 and C22A2 Construction Contract packages. The actual split of design work between the two is difficult to define. The first contract, while smaller in physical size and less complex, requires the development of all basic systems and the majority of the specifications. The second contract, although larger in size, requires less design development since the basic systems have been designed and the specifications developed. Therefore, there is not a straight ratio between percent of scope complete and the amount of credit due.

The effort expended to analyze the work completed by the SDC and to negotiate a fair and equitable settlement on behalf of MHD, was extensive. To assist in this effort, B/PB brought in a specialist who had dealt with contract scopes and termination situations similar to D022A. This was approved by MHD.

30. B/PB hired the same home office employee who performed the independent assessment for MCN 12-060 to negotiate a credit with DeLeuw for the removal of the C22A2 design package from DeLeuw's contract. This employee was not an engineer, nor had he been assigned to DeLeuw's contract prior to negotiations. MassHighway did not provide direction for this negotiation.

Response to Finding 30:

It was specifically because this home office employee had performed the independent assessment for MCN 12-060, that this individual was utilized. MHD had accepted this individual's credentials and qualifications for performing this type of work. MHD Senior Management concurred with the use of this individual, recognizing that his familiarity with these types of contracts in general and this contract in particular would make the process more efficient. MHD did provide specific direction to delete the C22A2 work from the scope of work for the SDC.

Recommendations:

29a. MassHighway should determine the extent to which the $1,770,000.00 credit and B/PB's $63,000.00 charge are justifiable.

Response to Recommendation 29a:

B/PB submitted supporting documentation related to the $1.77M credit negotiated with the SDC as well as the $63,000 charge. MHD did not request additional information nor question the appropriateness of the documentation provided.

30a. MassHighway must ensure that only the best qualified personnel are negotiating on behalf of MassHighway. MassHighway must also provide B/PB with the negotiation direction and approval of any negotiation position, costs and strategy for all significant changes to this contract.

Response to Recommendation 30a:

The two individuals involved in the negotiations with the SDC on behalf of MHD were the Authorized Representative (appointed and approved by MHD) and the home office employee (approved by MHD). Please note that authorized representatives are empowered to negotiate such issues with SDCs per their charter. This team was assisted by the B/PB Design Claims and Changes Manager. Regarding the negotiating direction and position, MHD gave direction to negotiate this particular change. The negotiation strategy is part of B/PB's scope of work as the Authorized Representatives of MHD interfacing directly with the SDCs and administering the SDC contracts on a daily basis.

Subject: B/PB's Recommendation to Accept DeLeuw's Proposal

31. DeLeuw does not meet the qualifications that B/PB developed for the bidding of the new C22A2 design package including evidence of past performance, ability to complete projects on schedule and within budget and DBE requirements.

Response to Finding 31:

DeLeuw's proposal was accepted by MHD because of the confidence developed that the new team and project approach developed by DeLeuw would meet critical design and schedule requirements, while meeting Project budget and related (e.g., DBE) objectives. The decision to proceed was made by MHD based on the confidence which MHD and B/PB had developed during the months-long review.

32. B/PB's basis for its recommendation to keep DeLeuw cannot be supported:

BASIS	REALITY
DeLeuw's Corporate commitment	Previous commitments broken
DeLeuw's Peer Review	No one has seen it
DeLeuw's New Staff	Still part-time and located outside MA
B/PB input for DeLeuw's staff	Already in DeLeuw contract
Cost Savings	No proof it will save money
Partnering	Partnering cannot solve these problems
Schedule	No proof schedule will improve

Response to Finding 32:

MHD concurred with B/PB's recommendation to accept DeLeuw's offer on the basis of the items outlined. We believe that this decision is supported by the evidence to date.

BASIS	REALITY
DeLeuw's Corporate Commitment Management and are clearly providing the support	DeLeuw's President and VP are Now involved in Project required.
DeLeuw's Peer Review undertaken by DeLeuw, they were under no provide copies The report impact on being the DeLeuw	This was an internal review therefore, obligation to to the Project. has had a positive the team approach demonstrated by Project staff.
DeLeuw's New Staff	Located in Boston, this staff has made a positive impact in every area of the IPCS design.
Cost Savings	The fixed price of the DeLeuw contract reflecting a savings of several millions of
dollars.	
Partnering	This proven technique will be a key mechanism for MHD, B/PB and DeLeuw to manage the IPCS design.
Schedule commitment to pursue and meet initial project milestones.	DeLeuw has shown a strong

With the mutual efforts of MHD, B/PB and DeLeuw, we can expect this success to continue.

33. B/PB's Project Director informed Project Director Zuk that many issues needed to be addressed in DeLeuw's proposal, including DeLeuw's staffing, prior to a recommendation being

made by B/PB. B/PB's Project Director stated that proposed staff for the C22A2 design included individuals that were either unacceptable, had duties not related to the new contract, or lacked enough experienced. Three (3) months later, a new B/PB Project Director came on board and recommended that the DeLeuw proposal be accepted stating that DeLeuw had addressed staffing problems. The same individuals were still listed as DeLeuw's staff.

Response to Finding 33:

DeLeuw carefully addressed the concerns expressed by the Project Director regarding the initial staff recommendations. DeLeuw proposed new individuals who were found to be acceptable. Both B/PB Program Managers concurred with the decision to accept DeLeuw’s proposal and strongly urged DeLeuw’s senior management to find the best individuals for the IPCS project team.

Recommendations:

31a. Unless DeLeuw can provide the qualified, full-time, Boston area based staff and guarantees that it is able to get the job done, its proposals should not be entertained and its current contract should be terminated.

Response to Recommendation 31a:

DeLeuw has provided a qualified, Boston area based staff to get the job done. It should be noted that, like all SDC teams, this staff is supplemented by staff from other offices, as permitted by its contract. However, DeLeuw has guaranteed to provide the necessary services for a fixed contract price. The Project is confident that DeLeuw will meet all the requirements of its assignment.

32a. MassHighway must ensure that any corporate commitments, deliverables and cost savings are guaranteed contractually by DeLeuw.

Response to Recommendation 32a:

MHD and B/PB have carefully worked with DeLeuw to provide the mechanisms to manage and achieve the design requirements of the Full Build IPCS.

33a. See previous staffing recommendations.

Response to Recommendation 33a:

Please see Response to Finding 33.

Subject: MassHighway's Role -

34. MassHighway's management structure and roles of its personnel working on this contract are not clearly defined. MassHighway's failure to identify a single MassHighway employee empowered to direct B/PB has added to the problems associated with this contract including B/PB directing DeLeuw without authorization from MassHighway and lack of action to correct DeLeuw's contract violations.

Response to Finding 34:

For the sake of clarification, day-to-day IPCS direction is the responsibility of MHD's Projectwide Engineer, a member of the MHD Operations staff. Day-to-day management oversight for IPCS is now provided by this individual's supervisor, the MHD Director of Operations. Issues that cannot be resolved between B/PB and this MHD IPCS team are forwarded to the Project Director for resolution. The Director of Design and Engineering remains available for technical guidance.

35. MassHighway directed and paid B/PB to simultaneously proceed in two (2) directions: to remove and reprocure the D022B design work and to add the D022B design work to DeLeuw's contract.

Response to Finding 35:

Their appears to be a misunderstanding concerning MassHighway's direction to "remove and reprocure the D022B work. This direction was initiated at the end of July 1994 as documented by correspondence to DeLeuw Cather and the initial mobilization of the B/PB procurement team. The reprocurement MCN (MCN-060) was prepared and negotiated between August and November 1994. The decision to demobilize this team was made in early February 1995 in parallel with MassHighway's initial direction to favorably consider DeLeuw's unsolicited proposal. This direction was formally approved later in 1995.

36. MassHighway directed and paid B/PB to simultaneously proceed with PCNs which added and deleted the same work to DeLeuw's contract. (PCN 14R1 and 37R1 were added 12/94 and taken out 01/23/95. PCN 46R1 was in process while it was also being taken out of DeLeuw's C22A2 scope).

Response to Finding 36:

The following information is presented to help clarify the facts associated with this finding. PCN's 14R1 (component identification), 37R1 (loop detector design and (installation), and 46R1 (additional budget for coordination), contained scope revisions for two different but related design products; C22A1 and C22A2. In December 1994, PCNs 14R1 and 37R1 were added to DeLeuw's contract after completing the normal review process before being finalized. In January 1995, the C22A2 portion of these PCNs was deleted from DeLeuw's contract by PCN 74 (C22A1 effort continued). PCN 46R1 was still in process when the C22A2 scope was removed from DeLeuw's contract in January 1995. As a result, PCN 46R1 was rewritten to include only C22A1 scope and became PCN 46R2. These PCNs adjusted DeLeuw Cather's contract to reflect the Project's decision to terminate DeLeuw's C22A2 effort. Later in 1995, this decision was reversed after careful consideration of DeLeuw's unsolicited proposal to again acquire the C22A2 scope of effort.

37. MassHighway did not keep FHWA informed of its solicitation

by DeLeuw to perform this work, not its consideration of giving this new design package to DeLeuw. At the same time MassHighway was entertaining DeLeuw's proposals. FHWA was sending its approval to have the C22A2 design removed from DeLeuw's contract. Because FHWA must approve changes to contracts and is the major funding source for this project, communication is essential.

Response to Finding 37:

We believe that the Project did keep FHWA informed of its intentions relative to D022A. In October 1994, FHWA was advised of MHD's recommendation to remove I-93 final design services from the existing DeLeuw contract. In November 1994, FHWA concurred with this recommendation. In August 1995, MHD formally advised FHWA that it agreed with B/PB's recommendation to accept the DeLeuw proposal and requested FHWA concurrence with this action. In the interim, informal discussions were held between FHWA and Project personnel on this subject. As noted in this finding, FHWA must approve changes to contracts and is the major funding source for this project. This reality assures the involvement of FHWA in all contract changes.

38. Contrary to state service contract regulations, 801 CMR 20.00, MassHighway allowed B/PB to bill for services included in MCN 12-060 that had been provided up to four (4) months prior to approval to MassHighway. Most travel requests were approved without any cost information. These requests ultimately resulted in a cost of nearly $136,000.00 to the Project.

Response to Finding 38:

Since the DO22A OIG Report, travel procedures have been revised to ensure that travel costs are reflected on the form along with evidence of a budget review prior to management approval. The MCN 12-060 effort had been approved by MassHighway prior to the formal approval of MCN-060 as noted in the Response to Finding 25.

Recommendations:

34a. MassHighway must have a clear structure for its oversight of B/PB. MassHighway must also clearly define the roles of its staff and identify a single MassHighway person empowered to direct and oversee B/PB's management of this contract.

Response to Recommendation 34a:

Please refer to Response to Finding 34.

35a. MassHighway must make its decision first and then direct B/PB to proceed in one cost effective management direction.

Response to Recommendation 35a:

Please refer to Response to Finding 35.

36a. See recommendation 34a.

Response to Recommendation 36a:

Please refer to Response to Finding 34.

37a. MassHighway must strengthen the lines of communication with FHWA to ensure approval of contract changes and maximum federal funding.

Response to Recommendation 37a:

Please refer to Response to Finding 37.

38a. MassHighway must stop the practice of approving B/PB's services after the work has already begun. No service should begin unless proper approvals are given in compliance with state regulations. MassHighway must stop approving travel requests without appropriate cost information.

Response to Recommendation 38a:

Please refer to Response to Finding 38.

Subject: IPCS Design Costs -

39. The cost to design the IPCS has gone from $10.9 million, not including B/PB's preliminary design costs, to $26 million, including DeLeuw's credit to MassHighway:

ORIGINAL CONTRACT	$10,864,209
MODS 1-21	4,105,033
13 OTHER MODS	1,130,332
13 PCNs (Plus PCN 84)	11,621,977
	$27,721,251
MOD 26II CREDIT	-$1,770,000
TOTAL COST	$25,951,251

Response to Finding 39:

The total cost for the IPCS has gone from $10.9 million to $24.8 million, as detailed below. All contracts require additional funding for construction phase services. Complex contracts, like D022A, are subject to other cost increases driven by related contracts, and operational and agency issues.

DO22A contract costs are as follows:

Original Contract		$10,864,209
MODs 1 - 33IB and 34 - 37		$12,952,581
MODs 33II and PCN 60	+	$ 1,015,874
Total		$24,832,664

Negotiations for PCN 060 remain to be completed.

40. There is a serious shortfall in the special engineering contingency fund:

Contingency Funds to date:	$7.6 million
PCN 83 (if approved)	6.4 million

TOTAL FUNDS PLACED IN CONTINGENCY $14.0 million

Response to Finding 40:

Contingency funding of $6.4 million for PCN 83 has been approved. A request for $997,000 for all outstanding PCNs is being prepared for submission.

41. Although the contact value is $26+ million B/PB has stated that the cost cap for this contract is between $15 and $17 million, and will be further reduced by the $1,770,000.00 credit from DeLeuw.

Response to Finding 41:

To help clarify this issue, please note that cost caps are applied to individual PCN's and not to the overall contract itself. The reference to the "cost cap" being between "$15 and $17 million" appears to not include major PCN's such as PCN 082 - Reinstate C22A2 Final Design Into D022A, and PCN 067 - Increase in Construction Phase Services, which together total $9.6 million. These PCN’s will not be included in the maximum payment amount until the contract modification process is completed.

The current maximum payment amount for the D022A contract, including Massport funds, is $23,816,790. This will be increased when MODs for approved PCN's 060 and 067 are applied to the contract. The estimate for these MODs is $1,015,874.

Recommendations:

39a. MassHighway must initiate steps to control the escalating costs -- caused by both DeLeuw and B/PB -- of this design including reducing the number of changes to and extra work for the IPCS design, more accurate B/PB estimates for changes, more efficient management by B/PB and a tougher negotiating position.

Response to Recommendation 39a:

Both MHD and B/PB have initiated steps to control cost and schedule on the DeLeuw Contract. More tightly written scopes of work have reduced the opportunity for extra work and associated costs. Also, more accurate estimates are being developed by both B/PB and the SDC. The personnel changes and monthly Senior Management meetings, mentioned in previous responses, have greatly improved management oversight.

40a. MassHighway should contact an audit of the special engineering contingency fund to determine the extent of the shortfall, track the services to funds, and to provide an accurate estimate of total funds needed for the life of this contract. Direct B/PB to ensure that no change is allowed unless fund exist to pay for the work.

Response to Recommendation 40a:

The requested steps have been taken. See the response to item 39 for the total cost estimate. The design scope for C22A2 is a fixed price contract. In addition, in response to a MHD request, B/PB has developed a set of metrics to more closely monitor DeLeuw's performance and track their actual costs versus B/PB's estimate during Construction Phase Services. These metrics will be reviewed regularly with B/PB and DeLeuw management.

41a. MassHighway must examine how this contract exceeded its cap, despite existing financial internal control systems in place and address the weaknesses in the system that allowed this to happen.

Response to Recommendation 41a:

Please see Response to Finding 41.

SECTION SIX

Technical Assistance Review of Responses to the Management Consultant Request for Proposals (RFP)

Assistance Requested:	June 8, 1994
Assistance Letter:	July 6, 1994
Project Responses:	August 16, 1994

Note: The Project issued and received responses to an RFP for management consultant services "to review certain management aspects" of the Project. The Project requested that this Office review and comment on the Project's choice of the top-ranked proposal in response to the RFP. The Project had concerns pertaining to possible conflict of interest issues for the top-ranked proposer. This Office responded to the request by letter, dated July 6, 1994. This Office affirmed that conflict of interest risk remained and that MassHighway officials needed to weigh this risk and ensure compliance with state conflict of interest law.

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Massachusetts Highway Department
Central Artery/Tunnel

CONFIDENTIAL COMMUNICATION

June 8, 1994

Ms. Wendy Haynes
Deputy Inspector General for
Contract Audit and Review
Office of the Inspector General
One Ashburton Place
Boston, MA 02108

RE: CA/T Project RFP for Outside Management Review Consultant

Dear Ms. Haynes:

I am writing in connection with the Massachusetts Highway Department's Request for Proposals for an outside management consultant to review certain management aspects of the CA/T Project.

The Department's Selection Committee recently completed its evaluation of the RFP respondents' written proposals and oral interviews. Based on this evaluation process, the Selection Committee has recommended selection of the top ranked proposer, Fluor Daniel, Inc. I have recommended to the Department and EOTC that the Selection Committee's recommendation be approved.

As you will recall, we worked with the Office of the Inspector General on the conflict of interest provision in the RFP, which requires that each proposer disclose any potential conflicts of interest. As shown in the attached documents, Fluor Daniel disclosed that its subsidiary is a passive limited partner with a subsidiary of Parsons Brinckerhoff in a partnership established to develop a toll road in San Diego.

The Selection Committee reviewed this disclosure and determined that the potential conflict of interest could be resolved by requiring Fluor Daniel to agree to maintain its passive role in the San Diego project and to establish a barrier between its subsidiary and Parsons Brinckerhoff. Attached for your information is a memorandum from Fluor Daniel confirming that, if selected, it will agree to these terms and conditions. We note in this regard that the Selection Committee reviewed Fluor Daniel's disclosures regarding past projects and concluded that they did not raise potential conflict of interest issues.

The Department believes that this agreement will resolve any potential conflict of interest issue. However, if the OIG feels that any additional steps need to be taken to address this issue, please contact Kurt Dettman of my legal staff by early next week.

Thank you for your continuing assistance and cooperation.

Sincerely,

MASSACHUSETTS HIGHWAY DEPARTMENT

Peter M. Zuk
Project Director

PMZ/KLD/ly

Enclosure

cc: W. Flynn, Selection Committee Chairperson

The Commonwealth of Massachusetts
Office of the Inspector General
One Ashburton Place, Boston, MA 02108

ROBERT A. CERASOLI
INSPECTOR GENERAL

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July 6, 1994

Peter M. Zuk, Project Director
Central Artery/Tunnel Project
One South Station; Fourth Floor
Boston, Massachusetts 02110

Dear Mr. Zuk:

Thank you for the opportunity to comment on the conflict of interest issue presented by Fluor Daniel, Inc., the top-ranked contender to review the contractual arrangement between the Department and Bechtel/Parsons Brinckerhoff (B/PB). Kurt Dettman and I have discussed the matter by telephone several times during the last two weeks. You have already taken steps to resolve potential conflicts of interest. However, those efforts do not in our view eliminate the risk.

As I understand from information your staff obtained from Fluor Daniel and provided to this Office, Fluor Daniel's subsidiary (FD) is one of several limited partners in San Diego Expressway, L.P, a California company formed to finance, design, build and operate a ten mile toll road near San Diego. The general partner in this venture is California Transportation Ventures, Inc., a company owned jointly by a subsidiary of Parsons Brinckerhoff and Transroute International S.A. The general partner controls and manages San Diego Expressway, L.P., including obtaining project financing, and later constructing and operating the toll facility. The success of the San Diego venture will determine whether the limited partners (including FD) make or lose money.

Among other factors, you should assess the risk of a conflict between Fluor Daniel's financial interest in the San Diego venture and its ability to conduct an objective analysis of Parsons Brinckerhoff's performance on the CA/T Project. For example, if you apply the tests of the State's conflict of interest law, you will find that Fluor Daniel falls short on two key components:

- Could Fluor Daniel "in the discharge of [its] official duties . . . *be required knowingly to take an action which would substantially affect . . . [its] financial interests* . . . ."? Yes. An objective study could discredit Parsons Brinckerhoff's performance on the CA/T Project. As an investor in the San Diego venture, Fluor Daniel has an interest in Parsons Brinckerhoff's reputation because it contributes in good measure to the value of Fluor Daniel's investment. The physical distance between the Boston CA/T Project and the San Diego venture makes no difference.

- Could Fluor Daniel's relationship to Parsons Brinckerhoff "cause a reasonable person . . . to conclude that . . . [Fluor Daniel] *is likely to act or fail to act*" because of its financial interest in the San Diego venture? Possibly. A reasonable person could conclude that Fluor Daniel had an incentive to soft-peddle its criticism of Parsons Brinckerhoff. We do not question Fluor Daniel's professionalism; however, the appearance of a conflict could compromise the final report's credibility.

M.G.L. 268A requires a State employee to make full disclosure of financial interest. To its credit, the Department required full disclosure in this instance and Fluor Daniel responded. Following the wisdom of the State conflict of interest law, the "appointing official" -- in this case, the Department -- should now weigh the risks and make a final written determination.

I hope our comments have assisted you in your efforts.

Sincerely,

Wendy Haynes
Deputy Inspector General for
Contract Audit and Review

cc: William Flynn, Deputy Project Director
Kurt Dettman, Counsel

Massachusetts Highway Department
Central Artery/Tunnel

Confidential Communication

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August 16, 1994

Ms. Wendy Haynes
Deputy Inspector General
for Contract Audit & Review
Office of the Inspector General
One Ashburton Place
Boston, MA 02108

RE: CA/T Project RFP for Management Review Consultant

Dear Ms. Haynes:

Thank you for your letter of July 6, 1994, in which you analyze the conflict of interest issue presented by the Massachusetts Highway Department's potential selection of Fluor Daniel, Inc. as the CA/T Project's Management Review Consultant.

As disclosed in its proposal, Fluor Daniel has a financial interest in a toll road project located in San Diego, California. We understand that you have carefully analyzed Fluor Daniel's financial interest in the San Diego project as it relates to Parsons Brinckerhoff's financial interest in the same project.

Based on its analysis, the Office of the Inspector General has advised the Department that Flour Daniel has an actual or perceived conflict of interest that contravenes M.G.L. c.268A and, therefore, could adversely affect Fluor Daniel's ability to impartially perform the CA/T Project Management Review Project.

Although we do not agree with all of your conclusions regarding the application of M.G.L. c.268A to this situation, we accept your general advice that Fluor Daniel's interest in the San Diego Project could create an actual or perceived conflict of interest that could adversely affect the credibility of the results of the CA/T Management Review Project.

Accordingly, based on the Office of the Inspector General's conclusion that Fluor Daniel could have an actual or perceived conflict of interest, the Department has directed that the CA/T Project commence fee and contract negotiations with the second-ranked proposer, Peterson Consulting Limited Partnership. The Department will document this determination in accordance with applicable procurement regulations.

We appreciate the Office of the Inspector General's advice on this matter as we share the goal of obtaining the most qualified, objective consultant to perform this very important project.

Sincerely,

MASSACHUSETTS HIGHWAY DEPARTMENT

Pete M. Zuk

Peter M. Zuk
Project Director

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SECTION SEVEN

Technical Assistance Review of Allegations of Poor Management Practices

Assistance Requested:	August 15, 1994
Assistance Letters:	May 15, 1995, May 14, 1996
Project Responses:	October 7, 1996

Note: The Project requested that this Office examine allegations of poor management practices on the part of Bechtel/Parsons Brinckerhoff (B/PB) and B/PB's response to these allegations. This Office responded in two phases: (1) a letter, dated May 15, 1995, to address B/PB's responses to the allegations, and (2) a letter, dated May 14, 1996, to address the alleged poor management practices. This Office found a number of deficient practices that B/PB had failed to correct. The Project responded by letter, dated October 6, 1996.

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Massachusetts Highway Department
Central Artery/Tunnel

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AUG 16 1994

OFFICE OF
INSPECTOR GENERAL

August 15, 1994

Ms. Wendy Haynes
Deputy Inspector General
Office of the Inspector General
One Ashburton Place
Boston, Ma 02108

Re: [redacted] Allegations and Subsequent B/PB Follow-ups

Dear Ms. Haynes:

Under the terms of the Intergovernmental Service Agreement (ISA) the Department has with your Office, I am writing to formally request technical assistance to examine not only [redacted] initial allegations but also the results of Bechtel's own review of the matter. The technical assistance requested includes reviewing the substance of the allegations and issues identified in subsequent B/PB reports on the matter as well as developing recommended corrective actions to perceived vulnerabilities.

Under separate cover, I have forwarded the material your Office requested on the [redacted] matter. Included in the material submitted is an additional follow-up report recently prepared by Bechtel, on the above referenced matter. Although this report represents an improvement over Bechtel's previous reports, the Department continues to be concerned about issues not adequately addressed or fully developed.

As you will note, the most recent Bechtel report on this matter chose to review selected practices and procedures across six construction contracts. The data produced as a result of this exercise raise other questions of importance to the Project. The report fails to analyze the data in such a manner as to demonstrate the actual resulting consequences or impacts to the Department. For example, the report found that one of the six contract offices failed to use a deficiency reporting system. The report acknowledges that this is not acceptable but does not investigate further to examine its effect, i.e., did the Project lose the opportunity to back charge the contractor for actual defects?

The primary focus of your technical assistance should be to identify from the documents, associated data and interviews of appropriate individuals, those practices which increase the project's vulnerability to fraud, waste and abuse in construction contracts.

I would appreciate the Office of Inspector General's timely

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response to this request in order that we may institute remedial measures as quickly as possible for all documented vulnerabilities.

Sincerely,

MASSACHUSETTS HIGHWAY DEPARTMENT

For WS Fly
Peter M. Zuk
Project Director

AD 2.4.2
094-2569

The Commonwealth of Massachusetts
Office of the Inspector General
One Ashburton Place, Boston, MA 02108

ROBERT A. CERASOLI
INSPECTOR GENERAL

JOHN W. McCORMACK
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May 15, 1995

Peter M. Zuk, Director
Central Artery/Tunnel Project
One South Station; Fourth Floor
Boston, Massachusetts 02110

Dear Mr. Zuk:

Attached to this letter is the first part of our response to your technical assistance request of August 15, 1994. You requested that this Office investigate two issues: an allegation of mismanagement made against Bechtel/Parsons Brinckerhoff (B/PB) and the adequacy of Bechtel Corporation's (Bechtel) review of the allegation. Your office found both Bechtel's and B/PB's handling of the matter unsatisfactory. As a result, you requested technical assistance from this Office. Our assistance consists of two phases: the first addresses the adequacy of Bechtel's review and is enclosed with this letter; the second will address the substance of the allegations. We have been in contact with your staff regarding the second part of our review.

Our review indicates that Bechtel and B/PB failed to adequately address the allegations and MassHighway's concerns in the two "special" audits conducted between March and August 1994. Although Bechtel found some allegations to have merit, it considered them insignificant. In effect, Bechtel dismissed its own audit findings. Additionally, Bechtel failed to conduct adequate research for the audits and compromised audit independence. With the Project beginning major construction work, MassHighway must know if B/PB can identify and correct management and control problems. Our review questions the adequacy of Bechtel's audit, and so the necessity and adequacy of the remedies offered by Bechtel and B/PB are also in question.

The second part of our review will examine construction management practices across contracts focusing on management controls, documentation, and communications. We are confident that we will have MassHighway's cooperation during our review. Please contact Neil Cohen, our project manager for this undertaking, if you have any questions. We will advise your staff of our information and site access requirements. Thank you for your cooperation.

Sincerely,

Wendy Haynes
Deputy Inspector General
for Contract Audit and Review

WH:NC
cc: William Flynn, Deputy Project Director
Susan Cobb, Counsel
Enclosure

Central Artery/Tunnel Project - Technical Assistance Request

Allegations of Construction Contract Mismanagement

Phase One: An evaluation of Bechtel Corporation's "special audits."
(Prepared by Neil Cohen, Deputy Chief, Contract Audit and Review Division)

Introduction

This Office reviewed Project documents relating to two "special audits" performed by Bechtel Corporation in 1994. Our review determined that the audits failed to adequately address the issues which prompted the audits and failed to address MassHighway's concerns.

In April 1994, at MassHighway's request, Bechtel began investigating allegations made in a December 1993 letter by a former employee (the complainant) of Bechtel/Parsons Brinckerhoff. The complainant alleged deficient construction management practices by B/PB on the Porter Street Outfall Sewer Relocation contract (C07B1). Specifically, the complainant alleged that:

1) B/PB failed to provide orientation and information to new staff;

2) B/PB failed to communicate with staff about work assignments;

3) B/PB made untimely and irresponsible management changes;

4) B/PB lacked adequate field documentation and document review;

5) B/PB employed excessive field staff; and

6) B/PB failed to hire staff with proper National Institute for Certification in Engineering Technology (NICET) certification.

Bechtel issued its first set of findings on June 13, 1994, verifying the lack of adequate field documentation and document review on the Porter Street contract. Bechtel, however, recommended no follow-up or corrective action. The audit supported none of the other allegations stating: "[The allegations did] not appear to be supported by facts nor the opinions [of those interviewed]." Bechtel relied primarily on anecdotal information collected in interviews to support its position.

MassHighway advised B/PB on June 17, 1994 that it needed assurances that: "[A] system of controls and procedures . . . are in place and working . . . Project-Wide." MassHighway expected Bechtel and B/PB to follow-up and determine the adequacy of the following:

1) procedures for field training, orientation, and communications;

2) procedures for the preparation of contract documentation; and

3) personnel management and supervisory practices.

MassHighway did not direct B/PB to pursue the remaining allegations, which included excessive field staffing and NICET certification.

On July 5, 1994, B/PB responded to MassHighway by stating the audit intended only to "explore" the allegations, not to "address corrective action measures." Nevertheless, B/PB stated it would conduct quality assurance audits and revise procedures to correct the deficient practices identified by Bechtel. B/PB did not address MassHighway's request that some issues be pursued. On July 19, 1994, MassHighway informed B/PB that the audit should have responded to MassHighway's "concerns regarding the adequacy of controls" in the administration of construction contracts.

As a result, Bechtel, with the assistance of B/PB staff, conducted a second "special audit" and released those findings on August 11, 1994, less than a month after MassHighway voiced strong concern. This second audit revealed that poor construction management practices existed across CA/T contracts, but B/PB characterized these problems as simple "lapses" in procedure.

Although Bechtel did not view these procedural deficiencies as significant, it recommended revising procedures, expanding training, and ensuring that staff follow procedures. Bechtel failed to address how B/PB should ensure staff compliance, how these recommended changes would solve the identified problems, and how the identified "lapses" had impacted the Project. For example, audit documents reviewed by this Office indicate the auditors suggested that a number of contractors could have been back-charged for incomplete or inadequate work if construction management had been more effective. Both Bechtel and B/PB failed to address this issue. Bechtel's recommendations emphasized doing what B/PB claimed to have been doing all along.

Concerned by the audit findings, MassHighway referred the matter to this Office. This Office is in the process of reviewing MassHighway's concerns. We have completed a review of the Bechtel audits and offer the following comments.

Findings

The First Audit

This Office found the following deficiencies in Bechtel's first audit:

• **Bechtel failed to conduct adequate research and did not accurately report the information from its audit.** For example, based on audit documents relating to the allegation about poor field communication, Bechtel never interviewed the complainant and only interviewed five of the 14 staff members who worked with the complainant. Those interviewed included two managers against whom the complainant made allegations, the manager who terminated the complainant and two field engineers.

As a result of the interviews it had conducted, Bechtel concluded that the complainant based the allegations on "subjective opinion, without apparent knowledge of sufficient facts" and so did not merit further investigation. The statements of the interviewed field engineers, however, do not support Bechtel's conclusion. For example, one field engineer offered that field communication "was about what you would expect" and that "he didn't depend on others" for information. The other field engineer stated that communication "was less than desirable" and that management mistakenly sent him to inspect the wrong work. These interviews do not support Bechtel's conclusions.

• **Bechtel and B/PB failed to address the causes and consequences of their own audit findings.** For example, Bechtel stated in its June 13, 1994 audit report that the allegation concerning inadequate field documentation "contained some substance." B/PB, however, reported to MassHighway that "this [was] not an issue" and assured MassHighway that "procedures and actions . . . were adequate."

Specifically, Bechtel identified a problem with the quality of documentation. B/PB maintained reports and records of poor quality. According to the audit finding, although Project procedures gave direction to staff on how documentation should be prepared, this direction was not followed by B/PB. The audit gave 15 examples of noncompliance with procedures, including the following:

- B/PB failed to record contractor payment reconciliations and properly process contractor claims. As a result, B/PB may not have processed claims or gathered important information in a timely manner.

- B/PB failed to properly prepare *Field Engineer Daily Reports* (FEDRs). Without these reports, the Project could not know the quantity and quality of work the contractor had performed and the resources used.

- B/PB maintained "spotty" photographic records.

Missing information could have impeded the Project's ability to determine what work was performed and how. Bechtel suggested that "other independent information [was] available" to compensate for the poor field documentation. Bechtel did not describe the source, quality, or availability of this "other independent information." It is not possible to assess whether Bechtel's judgment was sound in this instance.

In response to these claims, B/PB insisted that adequate procedures existed to ensure adequate field documentation. B/PB failed to address, however, its failure to enforce procedures. MassHighway responded to B/PB: "[T]he report does not assure us that corrective action has been taken to prevent this type of occurrence." MassHighway's letter also stated: "[Y]our report does not specifically identify nor speak to the applicability and compliance by all B/PB parties in the field with existing project procedures . . . ."

In the case of the allegation that the Project made untimely and irresponsible management personnel changes, Bechtel rejected the allegation stating the complainant had "an insufficient knowledge of the facts." In all likelihood, the complainant did not know the reasons for the Project's removal of the Porter Street contract's field manager in February 1993. Bechtel, however, disclosed in the audit that B/PB removed this manager, in part, due to "his lack of attention to administrative procedures" including, his failure to monitor the results of field testing and informing the contractor of deficient work. The complainant may have been mistaken when he classified this management change as "irresponsible," but this action seems to support the complainant's other allegations about mismanagement, a connection apparently not made, or ignored, by B/PB and Bechtel.

The Second Audit

Bechtel performed the second audit because of MassHighway's dissatisfaction with the results of the first audit. To its credit, MassHighway was not persuaded that Bechtel adequately addressed the questions raised about B/PB's construction management practices. MassHighway wanted Bechtel to review: 1) field training, orientation, and communications; 2) preparation of documentation; 3) preparation of contract documents; and 4) personnel and supervisory practices. This Office has the following comments on Bechtel's efforts.

- **Bechtel unnecessarily compromised the independence of the audit by allowing B/PB Project staff to assist.** B/PB could not be assured of impartiality and independence when Bechtel actively involved the audit subject in the audit process. In this case, B/PB staff interviewed field staff, wrote summaries of these interviews, collected and tabulated data, and assisted in drafting the audit report.[1]

For example, B/PB's Quality Assurance Manager assisted the one Bechtel auditor assigned to this audit. The audit report recommended that "for ensuring complete, accurate and timely contract administration documents" the Project distribute the internal quality assurance reviews to all construction contract managers in order to spur the self-correction of similar problems by other field offices. MassHighway, however, wanted to know why B/PB produced incomplete and untimely contract documents project-wide and how this problem could be resolved.

- **Bechtel remained unresponsive to MassHighway's concerns.** MassHighway requested that Bechtel examine personnel management and supervisory practices in the field offices for what Bechtel characterized as "a pattern of lax supervisory practices related to preparation and execution of critical contract documents." Bechtel responded only with an examination of the frequency of staff performance reviews and the compliance of these reviews with Project procedure. And this review was limited because the audit failed to discuss whether or not the performance evaluations identified the specific instances of procedural noncompliance that concerned MassHighway.

- **Bechtel identified systemic procedural lapses, but concluded the problems were insignificant just as it had in its first audit.** Bechtel's first audit identified problems in the management of one contract but insisted that procedures and controls made this one example an exception. In the second audit, Bechtel reviewed information for 14 construction contracts. All the contracts reviewed by Bechtel exhibited problems relating to procedural noncompliance and problems similar to those alleged by the complainant on the Porter Street contract. Bechtel found that:

  - Field staff failed to record certain data in their field reports. The audit found "inconsistent application of the existing procedures and the lack of uniformity in completing these [field] reports across contracts tested." In particular, the consistent omission of material quantity measurement data made it difficult for B/PB to confirm contractor costs for claims, time and material contract change orders, and regular contract pay estimates.

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[1] The United States Comptroller General's *Government Auditing Standards* states:

> In all matters relating to the audit work, the audit organization and the individual auditors, whether government or public, should be free from personal and external impairments to independence, should be organizationally independent, and should maintain an independent attitude and appearance.

- Field staff failed to pursue deficiency reports as required. When field staff identify unsatisfactory contractor performance, Project procedure requires the preparation of a deficiency report. Based on this report, the Project can backcharge contractors for poor performance as a compensatory measure. A sample of deficiency reports indicated that all six contract field offices reviewed by Bechtel issued deficiencies to the contractors but did not pursue backcharges. The audit concluded that "policy and direction regarding backcharges . . . needs clarification." Bechtel estimated that approximately 19 of the 33 deficiency reports (60 percent) reviewed, could have resulted in backcharges. Bechtel did not quantify the dollar amount it considered eligible for backcharges.

- No formal procedures existed for field staff orientation. The Project relied on a number of informal measures including the use of a "buddy system." Bechtel does not appear to have interviewed staff about the adequacy of these informal measures. Bechtel's report did not relate orientation to work performance and procedural compliance.

- No formal procedures existed for field staff communication. To test communication, Bechtel chose to review the frequency of staff meetings. None of the sampled contracts recorded meeting minutes or disseminated meeting information to staff. Bechtel only determined if the field offices held meetings, how often, and what topics had typically been discussed. Bechtel polled staff and found that one-third did not believe communication was adequate. Another third said they did not know. Bechtel recorded no narrative information with this survey. The audit did not address any other communication issues or the possible impact poor communication had on the effectiveness of field staff, the adequacy of construction management, or the relationship between the field offices and the contractors.

- No formal procedures or plans existed for training employees to the demands of the individual contracts to which they were assigned. According to Bechtel's audit notes, the field engineer supervisor on the Porter Street contract said that he assumed that an employee with prior work experience needed little training or orientation. The audit showed that field staff attended many of the available training classes. Staff, however, had not attended classes for inspections and documentation, the payment process, the contractor submittal process, the changes and claims process, and materials control -- all required courses, according to B/PB's training matrix. B/PB offered no classes in the preparation of field reports and record-keeping.

For the second audit, B/PB responded to MassHighway by letter on August 11, 1995. In response to these findings, B/PB said it would develop additional policies and procedures or revise existing ones, increase training, ensure that field staff have a clear understanding of their roles, and distribute internal audits of one contract office with all contact offices (to share "lessons learned").

Conclusions and Recommendations

The diagnostic work of the audit was inadequate; it is unclear whether the remedies offered by B/PB and Bechtel are sufficient. It is clear, however, that the Porter Street Outfall contract was fraught with problems. Although other construction contracts experienced problems as well, it is unclear whether many of the problems were unique to the Porter Street contract. Only additional research can answer this question. This Office plans to investigate these matters further. The second phase of our technical assistance will determine if there is Projectwide vulnerability to the issues uncovered on the Porter Street contract. Prior to the completion of the next review phase, the Inspector General offers the following recommendations:

1) All future internal audits should be conducted under a MassHighway approved scope of work. This will help to ensure that B/PB or Bechtel Corporation direct their respective efforts to answer MassHighway's questions and addresse MassHighway's concerns.

2) MassHighway should perform a quality assurance audit to determine if all special audit recommendations have been carried out.

3) MassHighway should develop guidelines for all future internal audits for the CA/T Project. These guidelines should discuss audit independence, the use of B/PB staff, and specify minimal research standards.

The Commonwealth of Massachusetts

Office of the Inspector General

One Ashburton Place, Boston, MA 02108

ROBERT A. CERASOLI
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May 14, 1996

Peter M. Zuk, Project Director
Central Artery/ Tunnel Project
One South Station; Fourth Floor
Boston, Massachusetts 02110

Dear Mr. Zuk:

Attached to this letter is the second and final response to your technical assistance request of August 15, 1994. Your request for this Office's assistance resulted from your dissatisfaction with Bechtel and B/PB's handling of an internal investigation. You requested that this Office investigate two issues: an allegation of mismanagement made against Bechtel/Parsons Brinckerhoff (B/PB) and the adequacy of Bechtel Corporation's (Bechtel) review of the allegation. MassHighway made a prudent decision in referring the allegations to this Office for an independent assessment. We value the opportunity to assist.

The first phase of our assistance, completed by letter of May 15, 1995, addressed the adequacy of Bechtel's review. Our review showed that Bechtel and B/PB failed to conduct a complete and objective review of B/PB's operations, even after MassHighway accorded B/PB two opportunities to redress weaknesses. MassHighway did not receive the level of service it has paid its construction manager to perform. Neither the allegations against B/PB nor MassHighway's concerns were adequately addressed.

During the second and final phase of our review, we examined B/PB's construction management practices. MassHighway specifically requested that we review the substance of the allegations made against B/PB, the issues identified by Bechtel in its internal review of the matter, and the Project's vulnerability to fraud, waste and abuse due to B/PB's alleged failings.

We conducted field work and data analysis for this review between September 1995 and January 1996. In our view, the best way to get to the bottom of these issues was to go into the field where the work was being done. The review entailed an examination of a sample of six CA/T Project construction contract field offices. We reviewed hundreds of documents and conducted 25 interviews with a broad range of key MassHighway and B/PB staff, in front-line positions at the construction sites as well as in managerial roles at the central Project offices.

Our review disclosed that B/PB has not complied with its own procedures, that certain procedures and practices are deficient, and that these deficiencies significantly increase the Commonwealth's vulnerability to fraud, waste, and abuse. Our review disclosed no specific evidence of fraud or deliberate wrongdoing by any individual; however, we can offer no assurance that these activities have not or will not occur. B/PB's failure to comply with key Project policies aimed at containing costs and safeguarding public funds, failure to effectively monitor and document its own activity, and MassHighway's lack of robust management oversight invite waste, fraud and abuse.

We recommend that MassHighway hold B/PB accountable for following procedures, that B/PB better document decision-making and problems identified in the field, and that B/PB implement those changes identified in Bechtel's internal audit corrective action plan. Furthermore, we strongly recommend that MassHighway increase its oversight of construction management by developing an independent MassHighway quality assurance program.

We have concluded that B/PB has performed poorly in key aspects of its construction management responsibilities. To ensure that these problems do not recur, MassHighway should strengthen its oversight role. As always, we would willingly consider any specific request to assist the Project in this undertaking and to augment MassHighway's efforts to build a stron effective system for holding consultants and contractors accountable for delivering the work the were hired to produce on time and within budget.

We appreciate the courtesy and cooperation of your staff in producing documents, making data available, and providing information during interviews. In particular, we would like to thank Marie Hayman of your staff for her assistance. If you have any questions or if we may be of further assistance to you, please feel free to contact me or Deputy Chief Neil Cohen, project leader for this review.

Sincerely,

Wendy Haynes, Deputy Inspector General for
Contract Audit & Review

Enclosure

cc: William Flynn, Deputy Project Director
Ron Grenier, Manager of Administration and Controls
Marie Hayman, Contract Administration Manager

May 1996

Central Artery/Tunnel Project - Technical Assistance Request

Allegations of Construction Contract Mismanagement

Phase Two: A review and evaluation of the CA/T Project's construction field offices.

Introduction

At the request of MassHighway, this Office has reviewed: 1) Bechtel/Parsons Brinckerhoff's (B/PB) and Bechtel Corporation's (Bechtel) internal investigation of allegations made by a former B/PB employee concerning construction contract mismanagement by B/PB and 2) the substance of the allegations. On May 15, 1995, this Office provided the first part or phase I of our review to the Project. Phase I addressed B/PB's internal investigation of the allegations. This Office issued the following findings:

- Bechtel and B/PB failed to conduct adequate research and did not accurately report the information obtained from their audit.
- Bechtel and B/PB failed to address the causes and consequences of their own audit findings.
- Bechtel unnecessarily compromised the independence of the audit by allowing B/PB CA/T Project staff to assist.
- The scope of Bechtel and B/PB's work was not responsive to MassHighway's concerns.
- Bechtel and B/PB identified systemic procedural lapses, but concluded the problems were insignificant.

This Office concluded that B/PB conducted an inadequate review. This Office recommended that MassHighway approve the scope of all future internal audits, that MassHighway implement its own quality assurance program, and that MassHighway develop audit standards for future internal audits of the CA/T Project.

This, the second and final phase of our review, addresses MassHighway's request that this Office examine the allegations of construction contract mismanagement against B/PB. MassHighway requested that this Office examine the allegations and recommend corrective action. MassHighway also requested that this Office identify "those practices which increase the project's vulnerability to fraud, waste, and abuse in construction contracts." This Office reviewed the same procedural areas that MassHighway had earlier requested Bechtel and B/PB to review. Specifically, MassHighway expected Bechtel and B/PB to determine the adequacy of the following:

1) Procedures for field staff training, orientation, and communication;
2) procedures for the preparation of contract documentation; and
3) personnel management and supervisory practices.

This Office's examination consisted of a review of a judgmental sample consisting of six construction contract field offices from a total of approximately 43 open construction contracts. The sample reflected contracts at different stages of completion, complexity, and cost. This Office reviewed CA/T construction management practices, procedural compliance, and the quality of documentation in the construction contract field offices for the six sampled contracts. Additionally, this Office conducted 25 interviews with Project staff, and reviewed hundreds of documents for the following contracts:

Contract	Title	Dollar Value	Percent Complete
C04A2	Boston Marine Industrial Park Tunnel	$180,000,000	85 %
C05B1	Tunnel Finishes	$50,000,000	80 %
C07A4	Vent Building 6	$20,000,000	70 %
C07A5	East Boston Emergency Response Station	$6,500,000	20 %
C13A1	South Boston Bypass Road	$24,000,000	90 %
C14C2	Utility Relocation	$25,000,000	50 %

Project documents contained the above information as of September 1, 1995, the date our review commenced.

Our review disclosed deficiencies in B/PB construction management practices in a number of areas. Our review of the six construction contract field offices disclosed procedural violations, inadequate construction management practices, and vulnerability to fraud and abuse. Our review also disclosed a lack of adequate internal management oversight. This Office has concluded that some of the allegations made against B/PB by the complainant have merit.

Moreover, B/PB has not satisfactorily addressed MassHighway's concerns about construction management practices or corrected the deficiencies in this area, contrary to statements in B/PB's corrective action plan of August 1994. As a result, B/PB has not adequately protected the interests of the Commonwealth and MassHighway during CA/T Project construction.

Findings

Our review disclosed deficient practices and vulnerabilities in construction contract management. For example, neither B/PB nor MassHighway strictly enforces documentation requirements, MassHighway exercises only limited field office oversight, and B/PB does not follow procedures and guidelines. The following are our specific findings and recommendations:

Finding 1: B/PB failed to correct deficiencies identified by its own internal audit. The following findings refer specifically to the allegations levelled by the complainant against B/PB, Bechtel's internal audit findings, and B/PB's efforts to implement the corrective actions outlined in the internal audit. As a result of Bechtel's internal audit findings, B/PB informed MassHighway that B/PB would correct the deficiencies. Our review disclosed that B/PB did not correct the deficiencies as promised. As a result, MassHighway has no assurance that the deficiencies in construction management have not had an impact on cost, schedule, fraud, waste, and abuse.

Finding 1A: B/PB has failed to improve the training program for field personnel.

In August 1994, Bechtel stated in its internal audit of construction management practices that "there is no written procedure to tie together the current activity for training employees assigned to individual contracts." The audit also discussed B/PB's Construction Training Plan which includes a training matrix that identifies required and optional training modules for each of the various staff positions involved with field construction. MassHighway expressed concern about the training issue. In order to address MassHighway's concern about the effectiveness of the training program, B/PB committed to implementing the following "action items" immediately:

1) The preparation of a comprehensive plan for accomplishing the training identified on the training matrix.

2) The addition of more training to the matrix that addressed selected procedures such as deficiency reports and field engineer daily reports.

Our review of the Project's training program for field staff[1] revealed that, contrary to B/PB's statement over a year ago, the program has failed to fully implement these changes. For example, although the training matrix appears comprehensive, not all staff have benefited from the program. This Office observed the following:

- Only three of the 14 field engineers assigned (at the time of our review) to the six contract field offices we reviewed attended field engineer daily report training. None had attended the training for deficiency reports, record drawings, and inspections and documentation. Our review disclosed problems in each of these areas. Timely training might help to ensure compliance with procedures and Project standards.

- None of the field engineers have taken all the required training classes contained in the training matrix, even though some of the field engineers have been working for the Project for over three years.

- Only four of the 14 field engineers have taken the field personnel orientation course. In some cases staff took these orientation courses months after starting employment.

- The complainant alleged that orientation for new staff was inadequate. The allegation is valid. Based upon interviews with staff, orientation in the field is, at best, informal. In some cases, orientation for a field engineer consists of no more than a conversation with the lead field engineer.

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[1] This Office reviewed the training records for all construction contract field offices including the six field offices sampled for this review.

- B/PB's response to the internal audit and the complainant's allegation was inadequate. B/PB stated in its August 11, 1994 response to Bechtel's audit, that it would "develop an RE [Resident Engineer] procedure for the orientation process." The procedure which resulted (Project Procedure 1234) states:

  > Orientation consists of presentations and instructions provided to newly assigned Construction Field Personnel to familiarize them with the basic policies and requirements associated with the functions they are to perform. . . . All newly assigned Construction Field Personnel complete an orientation program within the first two weeks of assignment. . . .

  The procedure continues by listing what assigned readings and training comprise the orientation process. This procedure was not comprehensive and B/PB does not enforce it.

- All but one of the field engineers have taken fewer than half of the 25 required courses. Some field engineers commented that they have not taken all of the required courses they believed they needed. For example, one field engineer assigned to a tunnel contract commented that he could not inspect work performance in confined spaces. He had never taken, although he had requested to take, B/PB's confined space training course. According to the field engineer, federal guidelines require this training for someone working in a confined space environment such as the ductwork contained within a tunnel structure. When his work required confined space inspections, he needed to request the assignment of another staff member who had this training.

- B/PB has not effectively prioritized the training matrix. The training courses listed on the matrix are categorized as required or optional courses but the matrix does not provide a schedule or suggested sequence for the training. As a result, most field engineers to date have taken more optional courses than required courses. For example, a field engineer may have received certification in soil density testing but may have never taken a course in filling out reports that would reflect the results of the testing.

- The REs have not followed Project Procedure 1234 which states that B/PB's Area Construction Managers and Resident Engineers "shall assist in the implementation of the Construction Field Personnel Orientation and Training Program by . . .

> ensuring that their personnel attend scheduled training programs." According to B/PB training staff, not all training courses have been regularly offered. As a result of not regularly offering courses, B/PB staff failed to implement the training matrix and to refer staff to scheduled classes. Also, the training coordinator stated that the REs receive letters reminding them that certain staff should take courses. However, this approach has not been effective in ensuring staff attendance.

According to B/PB's training coordinator, field staff should complete the required training matrix within six months. This has not happened for *any* of the field engineers included in our sample. As a result, field staff have not received basic training. According to the REs and lead field engineers we interviewed, many field engineers are hired because of their experience and so do not require basic training. This may be true. The prior experience of field engineers may make technical training unnecessary. However, formal training for management practices and procedures is needed and should not be a low priority. Training for field staff ensures consistency and compliance with construction management procedures and processes. The field engineers we interviewed had varied experience, but none had experience working on mega-projects, working for B/PB, or working for MassHighway. Some had never worked in the field before. This makes basic training all the more important.

Also, according to B/PB staff, B/PB requires all field engineers to obtain concrete inspection certification. Most field engineers assigned to the contract field offices we reviewed completed this training. The training coordinator referred to this technical training as lengthy and expensive. According to the field engineers we interviewed, field engineers perform only a small percentage of concrete testing. It appears that only the smaller contracts require field engineers to perform concrete testing. According to staff we interviewed, the smaller contracts require field engineers to perform testing only about 10 percent of the time. B/PB provides technical services staff to conduct concrete testing most of the time. B/PB's technicians appear to concentrate their concrete testing efforts on the larger scale CA/T contracts.

MassHighway should examine whether, in fact, all field engineering staff need this technical training and whether this process is cost effective. Having a back-up for the B/PB technical services staff is understandable, but the current level of technical training seems excessive. Moreover, MassHighway should examine whether or not field staff working for B/PB's subcontractors, and not directly for B/PB, should receive Project training without compensation from the subcontractors. This Office has not reviewed this issue.

Recommendation: B/PB should ensure that all field personnel take the required training courses in a reasonable period of time. B/PB should also consider assigning a staff person in each construction field office to coordinate training. At least one field office we reviewed has already done this. Also, B/PB's training coordinator should keep better track of who has not taken required classes. MassHighway should periodically review the implementation of the training matrix and should monitor the quality of the training through a review of course evaluations completed by field staff. Since it appears that B/PB has failed to honor its commitment to implement the training matrix fully, MassHighway should consider cost recovery proceedings against B/PB.

Finding 1B: Some REs failed to hold regular staff meetings for construction contract field staff.

Construction Management Directive[2] Eight instructs the REs to have staff meetings "on a regular basis, and at least every two weeks" for all field staff. B/PB issued this directive as a result of the Bechtel internal audit finding which identified inadequate internal communication on the Project. According to two of the four field engineers we interviewed, their respective REs either hold monthly rather than bi-weekly meetings or do not hold staff meetings at all. In addition, most field engineers stated that they have minimal professional involvement with any staff member other than the lead field engineer.

Our experience shows that staff find meetings important for efficient and effective communication. B/PB recognized this when it issued Directive Eight which states:

> The purpose of the meetings is to ensure that knowledge and understanding of all field personnel of current activities and issues pertaining to their respective contract as well as current Construction Group and CA/T project-wide policy.

Not having regular meetings violates a directive and contributes to the communications problems alleged by the complainant and identified by Bechtel's internal audit.

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[2] Construction Management Directives are not a formal part of Project Procedures. Directives are issued prior to a revision to Project Procedures so that a procedural change be implemented immediately.

Recommendation: B/PB management should ensure that REs hold meetings as required and that these meetings comply with the intent as well as the literal requirement of the directive. B/PB's Area Construction Managers should monitor this compliance. MassHighway should instruct B/PB to add Directive Eight to Project Procedures as soon as possible.

Finding 2: B/PB staff did not follow procedures. B/PB and MassHighway developed a series of procedures and guidelines for managing the CA/T Project. B/PB staff did not follow some of these procedures. Our review disclosed instances in which the lack of adequate Project documentation has increased the Commonwealth's vulnerability to additional costs and future litigation.

Finding 2A: Construction contract field offices did not maintain resident engineer (RE) drawings according to procedure.

Each of the six construction contract field offices reviewed by this Office maintained RE drawings in a different manner. The RE drawings comprise the official Project record of what has been constructed on a particular contract. After the completion of the contract, the RE drawings become the permanent record of the work performed under the contract.[3] According to Project Procedure 423:

> [T]he Resident Engineer will record daily, on the Resident Engineer Drawings, all differences resulting from:
>
> - Contract changes
> - Clarifications and resolutions of conflicts
> - Construction methods and field conditions
>
> 3.2 The Resident Engineer will:

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[3] See letter from the Office of the Inspector General to the CA/T Project Director, dated May 3, 1996, regarding record shop drawings.

- Use red pencil to show additional information
- Use green pencil to indicate deletions
- Include references to pertinent documents such as contract modifications, letters, meeting minutes, telephone conversations
- Attach clarifying documents as appropriate

According to Section 303 of the Resident Engineer's Manual:

> A. The RE will maintain an up to date complete set of Contract Drawings throughout the Contract with current revisions, clarifications, changes, and site discrepancies. The RE shall clearly mark these drawings "Resident Engineers [sic] Drawings". . . . [Section B not shown.]
>
> C. The RE will maintain a log that tracks all revisions and changes to each sheet of the Contract Drawings over the duration of the Contract.

Section 303 continues:

> After award of the Contract, the RE will establish one set of Contract Drawings as the official "Resident Engineers [sic] Drawings." These drawings must be maintained in good condition.
>
> The RE will record each day, as necessary, on the Contract Drawings, all differences resulting from:
>
> - Approved Contract changes (PCNs and modifications)
> - Clarifications and resolutions of conflicts
> - Construction methods and variances
> - Requests for Information
> - Field Survey Data of the work, developed by the Bechtel/Parsons Brinckerhoff (B/PB) Survey Subconsultant
> - Field Survey Sketches identifying field discrepancies developed by the B/PB Survey Subconsultants
> - Appropriate survey information from the contractor, such as test pit locations

Section 303 also includes the same instructions as the Project Procedures for marking the drawings and including references to other documents. This section also instructs the RE to list the documents attached to the drawings and to properly insert all revised drawings.

Our review of the RE drawings for the sample of six contract field offices disclosed that three contract offices did not follow procedure. By not annotating the drawings and recording changes, staff failed to record a great deal of valuable information. For example, staff in some field offices did not record design changes made through change orders during construction. Also, four of the six contract offices did not adequately identify the drawings as RE drawings. In three cases, contract field staff only labelled the first drawing while contract field staff for one contract did not label the drawings at all.[4]

All contract field offices we reviewed maintained a drawing control log, as required, but staff did not always keep these logs up-to-date. Also, in some cases, field staff attached pertinent documents to the drawings along with the drawing log while others attached nothing but the log.

In sum, for half of the contracts reviewed, the drawings have not been maintained as required by procedure. B/PB's internal quality assurance program, to our knowledge, did not identify this procedural lapse.

Recommendation: MassHighway should ensure that construction contract field office staff maintain drawings according to procedure. The RE drawings will remain the record of the Project long after the Project ends. MassHighway should consider developing an independent quality assurance program to monitor B/PB's compliance with MassHighway procedures, guidelines and directives.

Finding 2B: Some resident engineers did not follow procedures pertaining to the preparation of their office diaries.

Section 304 of the RE Manual describes the RE diary as follows:

> The RE is responsible for maintaining a daily record of pertinent Contract information. The Diary is part of the Contract files and contains a legal, contemporary, and factual account of work related events associated with the Contract or events which may have future influence on the Contract.

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[4] During our review, contract field staff in one field office took action to label the drawings correctly.

Section 304 instructs the REs, in part, to maintain the diary in a bound volume, make entries every day, and store the diary in a secure, fire resistant cabinet. Obviously, B/PB considers the RE diary an important Project record. The diary contains the day-to-day history of a particular construction contract field office.

Our review of the six construction contract field offices disclosed that only one RE stored the diary in a secure, fire resistant cabinet as required by procedure. One RE said the diary was kept at home. In addition, REs maintained current diaries in only three of the six contract field offices we reviewed. The diaries of the remaining REs were out of date by between one and two weeks. In violation of procedure, one RE maintained the diary in an unbound daily planner while procedure called for the diary to be in a bound hard-covered notebook. A review of the overall quality of the diaries disclosed that they contain general details about major occurrences on the contracts they cover. However, in our opinion, the REs should provide more detail in certain cases such as who made a key design decision and why.

Recommendation: MassHighway should ensure that the diaries are maintained properly by requiring B/PB staff to follow procedure. MassHighway should also consider a periodic review of the diaries by an independent MassHighway quality assurance program.

Finding 2C: B/PB did not follow procedure regarding Construction Management Directives.

According to Project Procedure 1205, the Project will issue directives "when it is necessary to either modify existing administrative procedures or when a new procedure is required." The procedure continues:

> Directives will only be issued when the revised information must be disseminated rapidly to ensure proper administration of Construction Contracts. **All Directives will be formalized through revision of the Resident Engineer's Manual, Project Procedures or Materials Manual.** [Emphasis added in bold.]

Directives are temporary instructions for construction field staff pending a change in Project Procedures or guidelines. However, few directives have actually been formalized and made part of Project Procedures.

At the time of this review, B/PB had issued 19 directives; the first in May 1993 and the most recent in February 1995. Three of the directives referred to changes to the Project's Materials

Manual. This Office did not review this manual or determine whether the directives had been incorporated into the manual. For the remaining 16 directives, only two had been incorporated into revised procedures by February 1, 1996. The following are the Project's directives:

1) PCN and Modification Process
2) Trench Compaction
3) Concrete Preplacement Inspection
4) CA/T Survey Requirements
5) Resident Engineer Deviation Information
6) Cancellation of Approved PCNs
7) Project-wide Police Detail Coordination
8) RE Staff Meetings
9) Organization Revisions - CA/T Change Management System
10) Soil Compaction Test Data
11) Certificates of Compliance
12) Submittal File Copies
13) Coordination of Design Changes
14) CA/T Change Management System
15) Handling of Abutter Complaints Alleging or Implying Potential Damage to Property or Personal Injury to Non-Artery Personnel
16) Project Change Committee Review of Project Change Documents
17) CA/T Change Management System, Information Copy to MHD Legal
18) Delegation of Authority CA/T Change Management System
19) Disputes Review Board Member Selection Process[5]

According to Project Procedure 1205, directives "will be formalized." Apparently, the Project saw directives as expedient but temporary measures. The directives, however, had the appearance of being permanent even though they were intended as temporary measures. For example, a series of directives altering the change order process have been issued since 1993. Yet B/PB did not update official Project Procedures to incorporate these directives until February 16, 1996. Also, a number of these directives have themselves undergone revision. The directives concerning change orders refer, for example, to a change in signatory and approval authority, the deletion of the "finding of fact" statement from the change order package, and a new multi-part contract modification process which allows the contractor to receive partial payment before an agreement on the change order's full scope of work.[6] Another directive provided information on how the RE could obtain permission to by-pass procedures.

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[5] B/PB has issued additional construction management directives since the completion of this Office's review.

B/PB should not relegate procedural changes of this magnitude to internal memoranda. If the procedural changes referred to in the directives require permanence then the directives should become part of permanent Project Procedures and policies.

Recommendation: B/PB should formalize directives in a reasonable time frame (for example, within 90 days.) MassHighway should review all current directives to ensure that all policy is documented in Project Procedures.

Finding 2D: B/PB staff did not prepare adequate meeting minutes.

According to Section 602 of the RE Manual, the weekly progress review meetings attended by the contractor and the Project's representatives "should address all outstanding contract issues, with specific attention to the actual work accomplished as compared with the Contractor's current RE accepted schedule." Section 602 continues:

> It is essential that the **discussions and agreements reached** during the Progress Review Meeting are **completely and accurately recorded.** The RE, or assigned staff, will record meeting minutes for each meeting and forward them to the contractor. . . . [Emphases added in bold.]

Project Procedure 1007 also briefly refers to the recording of meeting minutes. However, no guidelines exist to instruct staff about the quality, clarity, or detail required in the minutes. For example, procedures do not specify whether minutes should record conversations and debate or simply outline key issues.

Our analysis of a sample of progress meeting minutes from the six contracts included in our review disclosed that although staff record minutes on a standard Project form, the content of the minutes differs by contract. Our review disclosed the following:

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[6] See letter from the Office of the Inspector General to the CA/T Project Director, dated September 22, 1995, regarding the contract modification process.

- Minutes for three of six contracts reviewed did not identify which meeting attendee offered the information or commentary recorded in the minutes.

- No minutes reviewed by this Office provided due dates or a schedule for completing the action items discussed in the minutes.

- Although most meeting minutes attributed an action item to either a contractor or B/PB, staff did not record the name or position of the person responsible for taking the action.

- One contract maintained minutes in the form of an outline similar to an agenda. Staff recorded few details.

Overall, the sample of minutes this Office reviewed appeared adequate for the identification of basic contract issues. However, if staff require more detail, staff must refer to other, unidentified documents. This Office could not, in many cases, determine from the minutes what occurred at the meetings, and how staff made decisions. The minutes simply address the outcome of a meeting. As a result, these minutes fail to comply with Section 602 of the RE Manual which states: "It is essential that the discussions and agreements reached during the Progress Review Meeting are completely and accurately recorded." Staff do not provide a record of discussions or details of agreements in the minutes.

Meeting minutes provide one of the few tools that MassHighway has for regularly monitoring B/PB's discussions and decision-making in the field. B/PB prepares these minutes which become the only Project record of what transpired at a meeting in the contract field office or elsewhere. Without these minutes, MassHighway must rely on the recollection or notes of staff who did attend these meetings.

Recommendation: MassHighway should ensure that B/PB adequately records meeting minutes. An independent MassHighway quality assurance program could help to accomplish this goal. MassHighway should spot-check meeting minutes for completeness and instruct B/PB to augment the RE Manual and the procedures that relate to meeting minutes. Procedures should also require that any comments or corrections to the minutes be added by addenda and that both the resident engineer and the contractor's representative sign the minutes to indicate concurrence. MassHighway may also want to consider audio or videotaping meetings.

Finding 2E: B/PB did not perform claims avoidance reviews.

Procedure 229 "outlines the responsibilities and process associated with the Claims Avoidance Review of proposed construction Bidding documents for the Central Artery/Tunnel Project prior to their release." The responsibilities outlined in Procedure 229 include:

> (a) reduce the exposure to changes, claims, and disputes as a result of ambiguities and inconsistencies; (b) eliminate obvious areas of potential changes, claims, and/or disputes; and (c) ensure that the proper risk sharing posture is adequately addressed and accounted for in the proposed construction Bidding documents.

Procedure 229 also outlines four pages of issues that B/PB staff could include in the claims avoidance review. The review aims at eliminating potential contract problems before construction begins.

According to B/PB's Contract Administration Manager, the claims avoidance program has not been as effective as it could have been. According to the manager, staff perform a review after design completion but the review concentrates on contract completeness rather than cost avoidance. For example, staff do not use the issues listed in Procedure 229 as a guideline. According to the manager, the claims avoidance program "is not a dedicated claims prevention program," but rather a contract review process that tries to ensure the consideration of "lessons learned" from other contracts.

Our review identified a number of contract change orders that might have been avoided by an effective claims avoidance review program. For example, this Office applied three of the claims avoidance issues identified in Procedure 229 (interface and coordination requirements, right of way and access to site, and permit requirements) to the change orders issued by the six contracts included in our review. This Office identified approximately 60 change orders that fell within the chosen categories. Construction contractors estimated these changes to cost approximately $23 million. Of course, some of the 60 change orders might have been unavoidable. However, without an adequate claims avoidance program, no one will know how many might have been avoided and how much of the $23 million might have been saved by a review prior to the start of construction. Schedule adjustments and hundreds of job-hours devoted to the discussion and negotiation of these change orders could have been avoided as well.

Recommendation: MassHighway should ensure that B/PB institutes an effective cost avoidance program as required by procedure and work program 12.

Finding 3: B/PB has not provided the Commonwealth with an adequate record of construction issues and activity. The complainant alleged that staff inadequately documented change order work. Our review corroborates the allegation: in some instances field staff did not adequately record data, and staff did not adequately document field conditions and discussions with the construction contractors. Also, as mentioned previously, B/PB did not adequately record meeting minutes or maintain RE drawings and diaries. A weak record deprives MassHighway of an important tool for overseeing B/PB's work and could undercut the Commonwealth's position for cost recovery or other legal measures.

Finding 3A: B/PB has not adequately documented the contract change order negotiation process.

Project Procedures charge the RE with primary responsibility for negotiating contractor claims with the construction contractors. For a contractor to receive full payment for a contract change and for the contract change to become an official part of the construction contract, both parties must negotiate and approve a contract modification. The RE acts as MassHighway's chief negotiator during this process.

According to Project Procedure 1207, the record of negotiations should document these negotiations. Procedure 1207 defines the record of negotiations as:

> A written record detailing the negotiations of the equitable adjustment due to the changes and the settlement. It is signed by all members of the B/PB negotiating team and the contractor.

Project Procedures provide no other means for documenting the negotiation process. Project Procedures do not require minutes, summary memoranda, or any other narrative. In practice, the record of negotiations contains a one or two page summary of the change order and the negotiation process recorded by the RE or contract claims administrator.

Our review disclosed that these negotiations -- which can involve multiple negotiation sessions and numerous calculations -- are insufficiently documented. Most of the records of negotiation we reviewed did not sufficiently describe the negotiation process, what compromises the negotiators made and why. The record of negotiation often does not include the number of meetings, who attended, the times of the meetings, the dates of the meetings, the details of significant parts of the negotiation, who wrote the record, or the date staff prepared the record. As a result, the Project lacks an adequate audit trail for contract changes, some of which cost millions of dollars.

Recommendation: MassHighway should review the change order negotiation documentation process. The record of negotiation should take the form of meeting minutes, indicating who spoke and what was said. MassHighway should also consider tape-recording negotiating sessions for high-dollar changes or having a MassHighway representative present.

Finding 3B: Contract field staff have not adequately maintained Project photographs.

According to Section 307 of the RE's Manual:

> The Resident Engineer . . . is responsible for maintaining a pictorial record of construction activities of each construction contract. **Photographs often represent the single most important document that describes actual occurrences.** [Emphasis added in bold.]

Photographs provide a vital record of work performance, change order work, and differing field conditions. According to one lead field engineer we interviewed, not having photographs might increase Project costs during claim negotiations. One resident engineer expressed his conviction that the number of contractor claims (and subsequent change orders) decreases when staff take more photographs. Our review disclosed that although each contract field office has some photographic records, field staff do not effectively maintain or use them:

- Staff for one contract in South Boston did not adequately date photographs. Although the camera used by staff on this contract has a built-in date stamp, it has not worked consistently. Undated photographs compromise evidence needed for negotiating claims and future litigation, in the event parties cannot resolve a claim. The lead field engineer, and other staff as well, were unaware of this problem until we pointed it out.

- In most cases, staff do not adequately label or organize negatives. B/PB has not adequately maintained the Project's photographic history.

- Only one field office maintained the field photographs in a secure location, such as a fireproof cabinet. The REs informed this Office that no clear policy existed for what files belonged in the fireproof cabinets in each field office. Most use the cabinet for correspondence.[7]

- Staff in one contract field office in East Boston waited six months before developing film of field conditions. After developing the photographs, staff left the photographs in envelopes without annotation or organization.

- Staff in two contract offices waited between one and four months before developing film of field conditions.

Because of delays in developing film, field staff could not annotate photographs until months after staff took the photographs. Months later, staff may recognize the scene depicted in the photograph but not necessarily the date, time, specific details, or the reason for taking the photograph.

Our review of a sample of field engineer daily reports (FEDRs) disclosed some cases where incidents photographed by a field engineer were not recorded in the FEDRs. As a result, these photographs would have minimal value to the Project and indicate a deficient FEDR reporting process.

The absence of clear guidelines for taking and maintaining photographs contributes to the problems we noted above. The procedures leave the decision-making up to the RE who leaves it up to the field engineering staff. The RE Manual states:

> The Resident Engineer **may** also take photographs to record accidents or damages, unsafe working conditions, and areas where claims and changes are anticipated. [Emphasis added in bold.]

This Office's review disclosed that in most cases, staff did not make photographs a priority. According to one lead field engineer: "Photo-taking just never caught on." Some staff said they use a roll of film a week while others use a roll in a month. Not every contract requires the same number of photos but most of the contracts in our review had a large number of change orders and significant construction complexity.

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[7] This Office suggests that MassHighway look into how these expensive fireproof cabinets are used. This Office does not question the need to protect certain files. However, MassHighway should determine which files are vital to the Commonwealth's interests and reserve premium cabinet space for those essential records.

Recommendation: This Office recommends that MassHighway require photographs for the recording of unforeseen conditions, make procedures and guidelines more specific, and require the contract field offices to make greater use of the photographic record. Staff should adequately annotate photographs, process film in a timely manner, and keep photographs in a secure location. B/PB should consider assigning responsibility for maintaining negatives to B/PB's document control manager. MassHighway should consider videotaping construction progress, changed field conditions, and change order work. The experience of this Office has shown that the maintenance of an adequate photographic record greatly assists in the resolution of claims and in litigation. MassHighway should also consult (if they have not already) with staff of the U.S. Attorney or Massachusetts Attorney General for guidance on documentation standards.

Finding 3C: Staff did not produce and review Field Engineer Daily Reports (FEDR) in a timely manner.

Although Section 505 of the Resident Engineer's Manual does not specify when staff should produce and review FEDRs, Section 505 does direct field engineers to complete an FEDR for every calendar day they work. According to Section 505:

> [The FEDRs] provide the historical record of a Contractor's performance. These documents will be used at subsequent dates for such tasks as verification of payment, resolution of claims and documentation of acceptability of work.

As B/PB's primary historical record of contractor performance -- and a primary means for determining contractor progress payments -- staff should complete the FEDR in a reasonable period of time. According to one lead field engineer interviewed by this Office: "FEDRs are critical documents for supporting claims and changes. I can't emphasize enough the need for details in the FEDRs."

According to staff interviewed by this Office, most REs and lead field engineers give the field engineers a week to hand in the FEDRs to the lead field engineers. The lead field engineers then review the field reports and prepare a summary for the RE's review. Our review disclosed that in a number of cases, the preparation and review of the FEDRs took considerably longer than one week. At least two field engineers stated that it can take as long as a month to complete the FEDRs. At least one field engineer said it can take as long as a month to review and forward the FEDRs to the RE. Our review of the six contract field offices disclosed that the REs for two contracts were approximately three months behind in reviewing the FEDRs.

A lengthy review process does not ensure that the FEDRs contain contemporaneous accounts of what occurred at the construction site and deprives staff of a timely source of information, stalls feed-back, and delays corrective action by field engineers.

Our review of a sample of FEDRs disclosed that most FEDRs generally appear to have been prepared well. However, we did find incomplete FEDR's and insufficiently detailed FEDRs. For example, on one contract, the FEDRs did not record photographs taken by the field engineer. In other cases, FEDRs did not contain information pertaining to the name of the subcontractor performing the work, the type of work (e.g., change order work), and work activity numbers.

By letter of August 16, 1994, this Office advised MassHighway that: "B/PB failed to adequately document the conditions leading to change orders and work performed under the change orders" for the C07B1 - Porter Street Outfall Sewer construction contract.[8] MassHighway responded by letter on January 17, 1995:

> It is true that the Daily Field Inspection Reports on this contract . . . did not always provide the type of detailed information needed when responding to a Contractor's claim . . . the issue of providing detailed information . . . was addressed in March 1993. At that time all field engineers were provided specific instructions on the type of information and level of detail to be included on field reports. . . . The Project has taken several corrective actions:
>
> 1) Revised the procedure for preparing the Field Engineer's Daily Reports
>
> 2) Enhanced the training program for all field engineers
>
> 3) Increased the oversight function of the quality assurance group. . . .

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[8] See letter from the Office of the Inspector General to the CA/T Project Director, dated August 16, 1994 regarding the Porter Street Outfall Sewer Contract.

B/PB stated that it identified and implemented corrective action for deficient FEDRs in 1993. Our review disclosed that B/PB's corrective actions did not effectively address the problems we had earlier identified.

Recommendation: MassHighway should hold B/PB accountable for ensuring that FEDRs contain all required information, including change order work and contractor deficiencies. B/PB should ensure that staff prepare, review, and approve FEDRs in a timely manner.

Finding 3D: The deficiency reporting process needs improvement.

According to Section 506 of the RE Manual:

> A Deficiency Report is used to document a deficiency in completed work, or other contract work that is not acceptable, and deficiencies in the Contractor's Quality Control Program.

The responsibility for identifying and documenting deficiencies rests with the field engineers. Current procedures only discuss suggesting corrective action to resolve deficiencies to the contractor and verifying that the contractor took some corrective action. Procedures do not describe how to identify and report a deficiency. As a result, staff for each contract field office conform to their own unofficial procedures. Three of the four field engineers we interviewed stated that their contract field offices maintain an informal deficiency reporting process. For example, the field engineers identify a deficiency and then report the deficiency in one of the following ways:

> a) the field engineer informs the contractor's representative and waits for a period of time (two days to one week) to see if the contractor takes corrective action before officially documenting the deficiency, or
>
> b) the field engineer informs the lead field engineer who "negotiates" corrective action with the contractor's representative before documenting the deficiency.

In one case, a field engineer told this Office that either the lead field engineer or the RE through the lead field engineer told the field engineers to stop issuing deficiency reports.

Staff can resolve minor infractions quickly with minimal paperwork, but solid documentation is essential. B/PB should use deficiency reports to judge a contractor's performance. In fact, field staff for four of the six contracts reviewed by this Office stated that they thought the contractors for their respective contracts had not performed well. B/PB should, but apparently does not, adequately document poor contractor performance through deficiency reports, the withholding of payment, or a well documented series of communications. The RE cannot initiate correspondence or withhold payment unless field staff document contractor failings. If staff filter deficiency reports through informal field negotiation sessions, no paper trail for the RE or MassHighway exists. This practice deprives the Project of an accurate portrait of contractor performance and the work of the field engineers, and raises serious concerns about the vulnerability of the Project to fraud and abuse during these unofficial negotiations. Moreover, MassHighway will have little to rely upon if and when it decides to take legal action against a contractor.

The following example illustrates the need for accurate and complete reporting. On one contract, a field engineer interviewed by this Office stated that he had issued approximately 50 "unofficial" deficiency reports against the contractor. The lead field engineer attempted to resolve these unofficial deficiency reports. The field engineer admitted that he does not know how or when the lead field engineer resolved these deficiencies or if they ever became official. On this particular contract, staff issued only 15 official deficiency reports. This contract had four field engineers on staff. If each field engineer issued 50 unofficial deficiency reports for a total of 200, then only 15 (or eight percent) of the total became official.

An examination of the 15 official deficiency reports on this same construction contract shows that deficiency reporting has not been used to correct contractor errors. For example, MassHighway resolved five of the 15 deficiency reports for B/PB by agreeing to accept work that records suggest did not meet specifications. In two additional cases, MassHighway accepted the non-conforming work that had already been performed but required the contractor to correct future work. MassHighway and B/PB resolved almost one-half of the deficiencies at no cost to the contractor. The contractor did not pay any type of penalty or make any kind of restitution to MassHighway. We could not determine from the records we reviewed whether these deficiencies were negotiating points during change order discussions. We have identified similar cases for the other contracts included in our sample.

In addition, our review disclosed that contractors do not respond to deficiencies in a timely manner. Section 506 of the RE Manual states:

> The Contractor should indicate the corrective action that will be taken within one week after receipt of the Deficiency Report.

Our review of a sample of deficiencies from the six contract field offices included in our study disclosed that in many cases, the contractor did not respond to the deficiency in one week. Our limited review of contract documents disclosed that B/PB has not held the contractor accountable to the requirement to respond within one week.

The REs interviewed by this Office stated that their offices try to close deficiency reports in 30 days. Project Procedures do not define deficiency report closure. Our review disclosed that five of the six contract field offices took longer than 30 days to close a deficiency. The lowest average time of the five field offices was 55 days while the highest field office average was 218 days. One contract field office, still in the early phases of construction, had not issued any deficiencies at the time of this review.

Some deficiencies can have a significant impact upon the work being performed. It seems imprudent for such a large number of deficiencies to remain unresolved for so long. In some instances it may be appropriate for the RE to withhold a portion of the payment until the contractor corrects the deficiency.

Recommendation: MassHighway should address deficiency reporting and hold B/PB accountable for ensuring that deficiencies are documented and resolved in a timely manner. MassHighway should consider having procedures define or suggest what a timely resolution would be. To protect the Project's integrity, B/PB should discontinue all unofficial deficiency report negotiations. Also, B/PB should maintain clear documentation of deficiencies and deficiency negotiations and MassHighway should direct B/PB to add standard contract language relating to deficiency reporting to construction contracts.

Finding 4: Construction management oversight needs improvement. Many of the problems identified in our review could have been identified and resolved or avoided completely with adequate Project oversight.[9] MassHighway lacks an adequate mechanism for monitoring and evaluating B/PB's construction management work performance.

Finding 4A: B/PB's Quality Assurance Program needs improvement.

According to Project Procedure 301, the purpose of the quality assurance (QA) program "is to obtain quality through appropriate planning and control of work operations, and to verify by checking to ensure a quality product is provided." The system review functions as one part of the QA program. Project Procedure 302 defines the system review as follows:

> A documented activity performed by QA and assigned project personnel comprising a review team. The Review Team evaluates previously identified processes or systems for their implementation and effectiveness. This evaluation includes flowcharts, interviews, and other problem identification and data gathering techniques. Variations from established procedures and recommendations for improvement are documented and formally presented to the responsible Department Manager for review and disposition.

Each contract office included in this Office's sample had been the subject of a QA system review. Each system review identified areas of procedural non-compliance documented through a checklist, a brief narrative, and a request for corrective action. Each RE responded with a statement about what corrective action had been taken. Currently, the QA program has two staff members assigned to conducting the system audits and other field audits.

According to the QA manager, the program staff try to complete two audits per month. The QA staff plan these audits at the beginning of the year and prepare an audit schedule. Each field office knows exactly when the audit will take place. According to the QA Manager, the auditors will occasionally make an unannounced audit to verify compliance with a procedure identified through the formal audit as being in need of corrective action. Corrective action plans do not usually require the correction of past errors.

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[9] Peterson Consulting also remarked on this problem in its September 1995 *Management Review Report*, prepared for the Massachusetts Highway Department and the Central Artery/Tunnel Project.

Although the QA manager stated that the system review attempts to review overall performance, our review disclosed no evidence of this. Instead, the audit reports consisted of checklists used by the QA auditors and a brief narrative for these checklist items. Our review disclosed no other narrative or analysis of RE or field office performance. The QA manager, however, did note that his staff did not have the time to conduct qualitative audits or perform detailed work on every contract.

No mechanism exists for re-audit or monitoring in cases where the audit finds a contract field office in severe violation of procedures. Eventually the auditors will conduct another audit through the normal audit rotation. According to the QA manager, MassHighway receives copies of the audit findings but has no direct involvement in the process. One MassHighway construction manager stated that "QA is an internal B/PB matter" and saw no reason for MassHighway to get involved or show an interest.

The QA program as it operated at the time of our review, checks B/PB's procedural compliance by sampling contract field office documents and work products for several key procedures. The audits do not evaluate office performance, address quality of work, or staff ability. For example, no method exists for determining whether staff produced an adequate number of photographs or whether a field engineer's report reflects what happened on a given day. Furthermore, an RE can respond to a corrective action without altering performance. For example, if the audit finding identified a backlog in updating RE drawings, the RE can simply say that staff will update the drawings without offering any procedural change that would prevent a backlog from developing again.

Recommendation: MassHighway should establish its own independent QA program, spot-check and audit field operations for procedural compliance and quality of performance, and monitor B/PB's QA program. MassHighway should also recommend improvement in B/PB's QA process. For example, B/PB could re-visit contract field offices more often, and concentrate on a quality review of a few key areas rather than adhering to a comprehensive but superficial review of all field offices.

Finding 4B: MassHighway's oversight of B/PB's performance as the CA/T Project's construction manager needs improvement.

According to MassHighway's Director of Construction, MassHighway has assigned eight staff members to supervise, observe, and review B/PB's construction management function. MassHighway assigns two staff members to each of the Project's geographic areas (such as East Boston). Each geographic area includes not only active construction contracts, but contracts in the bidding cycle, in final design, and in the closeout process. For example, the East Boston area includes approximately 13 CA/T contracts in different stages of construction or development, not to mention various project-wide contracts (e.g., vent fan installation) and Massport projects that abut or interface with CA/T contracts. MassHighway staff attend biweekly progress meetings for each contract and Massport coordination meetings, as well as other meetings involving change orders, value engineering proposals, and cost recovery issues. MassHighway staff are also responsible for keeping abreast of construction progress, contractor claims, B/PB performance, and schedule adjustments. One MassHighway Area Manager interviewed by this office stated that he interacts mostly with his counterpart, B/PB's area construction manager, rather than the contract field staff who perform and directly manage construction. It appears that MassHighway staff are spread too thinly to function in both an oversight and administrative capacity.

Our review of construction contract field office files disclosed an almost total lack of correspondence between MassHighway and field staff other than general project-wide policy memoranda and a few specific internal memoranda. Evidently, MassHighway conducts most communication with B/PB contract field staff either orally or through electronic mail. In any event, the communication is largely undocumented. Moreover, as mentioned earlier, MassHighway does not appear to actively monitor B/PB's quality assurance process and has no quality assurance or performance audit program of its own.

MassHighway staff rely heavily on the B/PB area construction manager for information. This reliance is problematic because the B/PB manager can filter information or may not know all that occurs in the field. MassHighway's Director of Construction stated that he does not have regular contact with anyone in B/PB's construction management organization except for his counterpart, B/PB's Director of Construction.

Recommendation: MassHighway should examine the number, competency, and use of staff assigned to monitor B/PB and the Project. In order to provide effective construction oversight, MassHighway staff should consider periodic meetings with REs, field and office spot inspections, and better documentation of MassHighway's decision-making and positions on issues. The interaction of MassHighway staff with B/PB field staff could prove invaluable for MassHighway oversight of the Project. Staff priorities may need examination and alteration in order to accommodate these suggestions.

Finding 5: Other issues. The following issues identified by this Office require further examination either by MassHighway or by this Office, if MassHighway prefers to request technical assistance.

- **E-Mail.** It appears that MassHighway has not ensured that B/PB's practices with respect to retention and filing of electronic mail (e-mail) comport with its own procedures or with state public records law.

The Project's records are subject to mandatory disclosure under the Public Records law. In re: Quinn. (Igoe, Supervisor of Public Records, Public Records Division, Office of Secretary of the Commonwealth) (SPR93/226). Additionally, a bulletin issued by the Secretary of State provides: "[E]lectronic mail messages have the same potential to be public records as any other documentary materials created or received by Public Officials." Electronic Mail, SPR Bulletin No. 52, January 21, 1992 (Igoe, Supervisor of Public Records, Public Records Division, Office of Secretary of the Commonwealth) ("Bulletin"). The Bulletin provides in part:

> Electronic mail which will retain its usefulness for a period longer than three months and any electronic mail on which action is taken must be printed out and filed in accordance with the office's standard filing procedures.

According to the REs we interviewed, Project Procedure 239 governs the use of e-mail. Procedure 239 states:

> E-mail shall not be used to replace any written communications which Project policies and procedures dictate must be properly documented and filed in Project files. Such written communications must conform to existing policies and procedures on written communications.

Our review disclosed that Project staff substitutes e-mail for written communications in violation of Project Procedure 239 and fails to properly print out and file e-mail in accordance with state guidelines and Project Procedures. Based upon our review of Project files and numerous interviews with Project staff, it appears that MassHighway has not ensured that e-mail retention follows state guidelines. In practice, the individual e-mail user decides what requires retention.

According to staff, a great deal of communication occurs at the policy and management levels through e-mail. These communications include change orders, contract scope changes, issues involving contractors, and construction management decision-making. One staff member we interviewed stated that e-mail and meetings comprise the primary means of communication concerning design changes made during construction. One resident engineer stated that e-mail has replaced internal memoranda. The limited number of e-mail correspondence we did find in field office files discussed design changes, policy decisions, and drafts of letters to the FHWA. Staff do not save many of these discussions either electronically or on hard copy. The REs interviewed explained that they save and purge e-mail at their discretion and that B/PB automatically purges e-mail from the computer network once a month unless the sender or recipient saves it on the computer network. All but one of the six contracts reviewed by this Office had few printed e-mail correspondence in B/PB files. Some contract offices had no printed e-mail correspondence on file.

Our review disclosed little internal correspondence in any form, other than project-wide policy statements, in B/PB files. Our review disclosed an almost total lack of any correspondence, of any kind, from MassHighway in the files of the contracts reviewed by this Office.

The failure to retain e-mail seriously diminishes the audit trail within the Project and makes it more difficult for MassHighway to provide adequate oversight of B/PB's work. Our review disclosed that, contrary to Project Procedures, the controls placed upon other means of communication do not in practice appear to be applied to e-mail. For example, staff do not log in e-mail, give e-mail a document control number, or regularly make e-mail an official part of any Project file.

Recommendation: MassHighway and B/PB should retain pertinent e-mail as an official part of the Project's record. MassHighway should amend work program 14 and Project Procedures to reflect that e-mail must be retained as a Project record. This Office intends to further evaluate this matter.

- **Cost Recovery:** Our review identified a number of potential cost recovery issues from the change orders of the six sampled contracts. These cost recovery issues do not appear on MassHighway's cost recovery list. According to MassHighway staff, no criteria or guidelines exist for the referral of cases to the cost recovery review panel. The panel relies upon referrals from the REs and it appears that the REs do not refer all potential cases. According to MassHighway staff, a cost recovery issue will probably not initiate action if the cost of pursuing the recovery seems greater than the cost of the error under review. However, we identified a number of potential cost recovery issues on the same construction contract that MassHighway might pursue together as a package to build a stronger case against a contractor. Currently, MassHighway examines each potential cost recovery issue individually thereby reducing the recovery potential per contract and inflating the costs of pursuing reimbursement from a contractor or designer.

Recommendation: MassHighway should make the referral guidelines clearer for the REs. MassHighway should also consider allowing MassHighway staff to make referrals to the panel. MassHighway should also consider pursuing cost recovery for the accumulated issues against a contractor rather than reviewing each case individually. This Office will be reviewing the cost recovery system in greater detail.

- **Backcharges:** Our review identified a number of cases for the six sampled contracts where B/PB has backcharged a contractor or has supported one contractor backcharging another for errors or other issues. However, we have not found a single case where MassHighway has backcharged B/PB. Our review, although limited in this area, identified some potential backcharge cases. For example, a contractor received interest on a progress payment due to late processing by B/PB. B/PB should be responsible for the interest charges. In this case, interest charges came to over $8,000 for 16 days.

Recommendation: MassHighway should backcharge B/PB for errors and unsatisfactory performance.

- **RE Hiring:** Our review identified five cases where B/PB replaced the RE for reasons other than an RE voluntarily leaving B/PB's employ. Some reasons for an RE's removal appeared quite serious. For example, B/PB removed at least two REs because they could not handle the responsibilities of the job. An incidence of five cases of removal out of our small sampling appears high to us. MassHighway should examine B/PB's hiring process for REs. Based upon our review, only two out of five resident engineers interviewed by this Office had prior construction contract field office management experience. Although all had construction industry experience, only one had extensive field experience while none had experience managing a large, complex construction contract. We question why B/PB has not consistently hired REs with extensive field experience.

Recommendation: MassHighway should review B/PB's hiring standards and practices.

- **RFIs:** RE offices do not process contractor Requests for Information (RFI) in a timely manner. Section 501 of the RE Manual defines an RFI as a document "used to request, review, answer, and make disposition of" requests from a contractor for additional or clarifying information, clarification of discrepancies, variations from the contract, contract change orders, and other contract changes. RFIs are an important means of communication between the contractor and the Project. Section 501 does not specify how quickly an RFI should be resolved by the RE's office. However, the six REs interviewed by this Office stated that their offices attempt to respond to RFIs within 30 days.

Our review identified a sample of RFIs from the six contracts we studied and disclosed that many RFIs take longer than 30 days to resolve. For example, for five of the six contracts reviewed, a significant percentage of RFIs take approximately 53 days for a response. To maintain contract progress and efficiency, field staff should respond to RFIs as quickly as possible. Some issues will require more thought and analysis; however, when a contract field office takes an average of two months to resolve almost half of the RFIs presented to it, B/PB exposes the Commonwealth to time delay or other compensation claims.

Recommendation: B/PB should make every effort to resolve RFIs in a timely manner. B/PB should also revise procedures or the RE Manual to discuss the need for a speedy resolution of issues including a recommended timeframe. Otherwise, the Project is vulnerable to contractor claims and schedule delays.

- **RE Files:** Contract field office staff provides, and to some extent the RE Manual requires, redundancy in field office files. For example, one letter may be filed in many different files as a cross-reference. Also, the contract field offices inconsistently follow the file index system outlined in the RE Manual.

Recommendation: Both MassHighway and B/PB should review the filing system to determine if it is adequate for the needs of the Project.

- **Field Engineer's Handbook:** All of the field engineers interviewed by this Office stated that the *Field Engineering Inspection Handbook* that B/PB provides to all field engineers is too general, not very useful, and too bulky to carry into the field. As a result, the field engineers do not use it often.

Recommendation: The Project should consider getting input from experienced field engineers on how to improve the handbook. According to the Project, this handbook replaced the *Field Engineer's Manual* even though the handbook states: "The requirements included herein do not replace the . . . Field Engineer's Manual . . . ." The Project needs to provide better resources for its field engineers.

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Massachusetts Highway Department
Central Artery/Tunnel

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OFFICE OF
INSPECTOR GENERAL

October 7, 1996

Office of Inspector General
One Ashburton Place
John W. McCormack Building, Room 1311
Boston, MA 02108

Attn. Ms. Wendy Haynes, Deputy Inspector General
for Contract Audit and Review

Dear Ms. Haynes:

Attached to this letter is the Project's response to the report entitled Construction Management Phase II, prepared as a result of our technical assistance request.

This report prompted us to conduct several internal reviews of our practices and procedures in construction field offices which are referenced in our responses to your findings. We consider this an important and worthwhile outcome of your field work, data collection, and report preparation.

The report concluded that MHD should strengthen its oversight role of B/PB. Please be advised that providing appropriate oversight while fostering an environment where teamwork, initiative, and partnering are valued, is the Project's management team goal.

If you should have any questions, or require additional information regarding these matters, my point of contact is Marie Hayman at 342-1344.

Sincerely,

MASSACHUSETTS HIGHWAY DEPARTMENT

FOR WS

Peter M. Zuk
Project Director

RECEIVED

OCT 10 1996

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INSPECTOR GENERAL

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Response to Phase Two: The OIG's Review and Evaluation of the CA/T Project's Construction Field Offices

MHD has asked B/PB to review these findings internally. The Construction Contract Management Program involves many aspects including procedures, oversight, training, issue resolution, quality improvement and partnering. In its entirety, the program is working satisfactorily and, as your report states there have been no identifiable impacts to cost schedule, fraud, waste and abuse associated with the program. Since the August 1994 Bechtel audit, there have been improvements and the program continues to be enhanced as situations dictate changes to procedures and policies.

Finding 1: B/PB failed to correct deficiencies identified by its own internal audit.

The following findings refer to the allegations by the complainant against B/PB, Bechtel's internal audit findings, and B/PB's efforts to implement the corrective actions outlined in the internal audit. As a result of Bechtel's internal audit findings, B/PB informed MHD that B/PB would correct the deficiencies. Our review disclosed that B/PB did not correct the deficiencies as promised. As a result, MHD has no assurance that the deficiencies in the construction management have not had an impact on cost, schedule, fraud, waste, and abuse.

Response:

MHD continues to provide close oversight of the construction management program. Our review as described in the specifics which follow, indicate that a number of the deficiencies identified in the previous audit have been corrected. Additionally, the MHD construction management organization is very involved in the oversight of the B/PB construction management program. This is especially true in the development, negotiation, and approval of change orders where the greatest opportunity exists for impacts on cost and schedule or result in fraud, waste and abuse. As another level of assurance the MHD legal department also reviews changes to construction contracts that are greater than $250,000. The FHWA provides an addition tier of Project oversight with particular emphasis on scope, federal participation, cost and funding.

Finding 1A: B/PB has failed to improve the training program for field personnel.

B/PB should ensure that all field personnel take the required training courses in a reasonable period of time. B/PB should also consider assigning a staff person in each construction field office to coordinate training. At least one field office we reviewed has already done this. Also, B/PB's training coordinator should keep better track of who has not taken required classes. MHD should periodically review the implementation of the training matrix and should monitor the quality of the training through a review of course evaluations completed by field staff. Since it appears that B/PB has failed to honor its evaluations completed by the training matrix fully, MHD should consider cost recovery proceedings against B/PB.

Response:

B/PB prepared a comprehensive plan in August 1994 addressing scope, purpose, administrative procedures and topic outlines of the training modules to be presented. The plan established the content of each course, a presentation schedule, the process for notifying field offices of courses to be presented, and training records: both individual records and course attendance records. B/PB continues to meet all of these objectives.

A program of training modules to be presented is published on a quarterly basis. In addition, an announcement of each individual course is sent out two to three weeks prior to the scheduled session. The announcement includes a comprehensive list of all previous attendees by name and position so that managers can determine who should attend the near-term presentation. Records are kept based on individual attendance sheets. These records include certifications for American Concrete Institute training and Allied Massachusetts certifications, as required by FHWA and MHD.

Since August 1994, 23 training modules have been added, including a Field Engineer Daily Report module and a Field Personnel Orientation Course which includes Deficiency Report training. "Inspections and documentation" is not a training module; however, these activities are addressed in various modules as appropriate. Additionally, record drawing maintenance is not a training program but rather a procedural program. The modules are prioritized as required, optional, appropriate to contract scope, or specified by job requirements. Orientation and certain safety modules are the highest priority of the required modules.

The scope of the contract to which an employee is assigned determines whether or not a training course is "required". There are 17 courses designated as "required". Only certain safety training modules and materials testing certification modules are mandatory for performing related activities. "Required" in the context of the Construction Training Program connotes an important management objective, with the aims of standardizing selected processes and enhancing overall quality of performance.

It should also be noted that on-the-job training and the experience level of individual employees often reduces the need for strict adherence to classroom training requirements. Project field engineers have an average of over 30 months experience on the Project and an even greater level of total industry experience. It would not be beneficial to require individuals already possessing the required knowledge to attend classroom teaching.

The Project believes there should be a balance between class room training, personal experience, and on-the-job training. The training records indicate that for all field engineers on the Project the training has been accomplished and that there have been significant improvements from the previous Bechtel internal audit. In fact, 66% of the field engineers have completed all of the required training with some of the management courses such as orientation having been completed by 82% of the field engineers. The aggregate attendance of field engineers at required modules since August of 1994 has been 776 and at optional modules 91.

Project Procedure 1234 - Construction Field Personnel Orientation and Training Program identifies how the training program operates, the required readings, and the courses/requirements of the program. This program is consistent with industry standards such as the Washington Area Metropolitan Transportation Authority (WAMATA) Program.

Since August 1994 this program has been reviewed by senior management and amended three times. As a result, several modules have been deleted and 17 modules have been added covering topics such as drilled shaft installation, geotechnical instrumentation, and material control. Currently eight additional modules focusing on specific technical inspection expertise are being developed. The requirement for these courses has developed due to changed construction techniques, and balances in staffing between the field engineers and other testing organizations. With regard to concrete specialty training, the Project has made a special effort to train the field engineers in this area to achieve a cost effective balance between the inspections done by the field engineers and those done by the materials testing laboratory.

During the data collection period and on the jobsites visited, concrete placement was minimal compared to previous periods and future demands as the Project moves into Downtown and South Boston work. This training will be cost beneficial since the field engineer inspections will increase from 10% to 30% of the total inspections.

As suggested in the report, the field orientation program needs added emphasis to ensure full participation. As the report states the Project has not trained 100% of the field engineers. However, the current procedure does not take into account the experience, on and off-Project, and the on-the-job training of the field engineers. With the approval of the B/PB Construction Manager, the procedure is being modified to exempt employees from specific training classes when they already possess the knowledge from previous training or on the job experience that they would receive from participating in a Project class. The procedure is also being revised to only allow personnel to be excused from training by the B/PB Area Construction Manager.

Finding 1B: Some RE's failed to hold regular staff meetings for construction contract field staff.

Response:

B/PB conducted a survey of all Resident Engineer (RE) offices to follow up the finding. Among the 22 Resident Engineering offices, nine hold weekly staff meetings, twelve hold bi-weekly staff meetings, and one holds occasional staff meetings. The RE who does not hold regular staff meetings has been directed to initiate them. The RE needs the flexibility to determine the need for staff meetings based on stage of contract completion activities being accomplished, and other Project issues that may dictate changes to set agendas. Regarding the list of agenda items in Construction Management Directive #8; thirteen REs address the list; five address most of the list; and four use the list selectively. All field office personnel are required to attend the meetings including support staff such as Claims and Changes and Cost/Schedule personnel.

The Project has additional programs to enhance information flow. The Project posts Project wide progress charts in the RE Offices and attaches weekly Project wide progress notes to the network which is available to all field employees. Additionally, the B/PB Program Manager meets weekly with groups of employees where information is disseminated. There is also periodic question and answer letters published to all employees.

Finding 2: B/PB staff did not follow procedures.

B/PB and MHD developed a series of procedures and guidelines for managing the Project. B/PB staff did not follow some of these procedures. Our review disclosed instances in which the lack of adequate Project documentation has increased the Commonwealth's vulnerability to additional costs and future litigation.

Response:

On a large project there will always be some areas where procedural compliance is not 100% due to misinterpretations, excessive workload, equipment availability and the need to continually evaluate and improve procedures and programs. The Project agrees that there are instances where procedural non-compliance evolves in the system. When identified the Project evaluates the non-compliance to correct the specific situation. The correction may involve procedural change, workload reallocation, computer program/equipment changes, or directing compliance with the procedure. As an example, the Project is currently upgrading the computer programs and equipment of the RE offices so that procedural compliance can be achieved with fewer jobhours. During this period some offices that are not complying with certain aspects of the procedures are being allowed to operate in the current mode so as to not waste hours complying with an existing program that will be replaced by September 1996. As an example, the existing program for monitoring material and Contractor submittals works well for materials, but not for Contractor submittals. Therefore, a number of offices are using Lotus 1-2-3 spreadsheets to track Contractor submittals which is not in accordance with the procedure. This system is being revised to make it more relevant to the requirements and easier to use. This type of continuous process and procedural change is required to remove constraints and to reduce the workload.

There has been no indication that operating in this manner has increased the Project's vulnerability to costs and future litigation. In actuality since the start of construction over four years ago the programs in place, including partnering, have entirely precluded litigation.

Finding 2A: Construction contract field offices did not maintain resident engineer (RE) drawings according to procedure.

Response:

This process is much improved and is currently being revised to further ensure compliance. Since 1994, RE Procedure 501 - Handling Requests for Information (RFI) and Project Procedure 430 - Handling Requests for Design Changes During Construction were revised to better describe the RFI process, including the addition of detailed flow charts. The RE Offices have improved the posting of RFI's against the applicable drawings and the Quality Assurance (QA) Department has identified fewer deficiencies with the RE document drawings in recent audits compared to audits conducted in 1994. The process of marking up contract drawings with red and green pencils, recording the differences from contract changes on the drawings, and attaching pertinent documents to the drawings is labor intensive particularly so since this information has to be transferred to subsequent revisions. We are currently implementing improvements where changes will be incorporated in new revisions of the drawings which will require the RE Offices to identify on the record drawings the changes that occur between revisions.

The Project agrees that record drawings are important and will remain the record of the Project after completion. Although procedural compliance may not be 100% there is no valuable information lost due to lack of identifying it on the drawings and certainly not due to the record drawing not including a record drawing identification. The Project's program of checks and balances precludes this from happening by the fact that although RFIs or changes may have been omitted from the record drawings the changes to the affected drawing are still identified on the PCN, RFI, etc. for future incorporation. The Contractor also maintains a separate record drawing file. The final job reconciliation includes review/incorporation of all of these issues in the "as-built" process to ensure that the drawings reflect what occurred on the Project.

MHD has directed B/PB to ensure all record drawings are appropriately identified and to incorporate the revised process for maintaining/updating the record drawings.

Finding 2B: Some RE's did not follow procedures pertaining to the preparation of their office diaries.

Response:

Procedures are continually evaluated for the value they add to the Project. Subsequent to the review the Project determined the RE Diary was redundant as the information contained in the diary was contained in other field engineering documents (e.g., reports, correspondence, PCNs, MODs, etc.). In March 1996, the RE Procedure which required the diary was deleted.

Finding 2C: B/PB did not follow procedure regarding Construction Management directives.

Response:

The Project concurs that a reasonable time frame should be permitted and established to formally incorporate Construction Management Directives in the principal controlling Project Procedure and that Project Procedure 1205 did not envision "Stand Alone" Construction Management Directives. However certain Construction Management Directives are stand alone in nature rather than a revision or sub-component of an existing RE, Project, or Materials Manual procedure. Project procedure 1205 is not clear in defining the manner in which such circumstance would be handled.

These CMD's are a permanent instruction/guidance. There is no controlling procedure to amend for these instructions/guidance CMD's. They do not warrant the assignment of a separate and distinct Procedure beyond the CMD number designated.

Project Procedure 1205 is being amended to reflect a maximum 90 day duration. The 90 day duration will apply unless written justification satisfactory to the B/PB Construction Manager has been approved permitting an extension of the 90 day period. The procedure will also be amended to address the administration of "Stand Alone" CMDs.

As of June 13, 1996, 27 Construction Management Directives (CMDs) have been issued. Three were incorporated in the procedures and withdrawn from the Resident Engineer's Manual. Nine were incorporated in the procedures and not withdrawn. (This was corrected via a distribution memo dated June 12, 1996 to Resident Engineer Manual holders.) Five will not be incorporated into procedures because they provide background or policy information not normally found in procedures. Ten CMDs are designated to be incorporated in the procedures by August 16, 1996.

Finding 2D: B/PB staff did not prepare adequate meeting minutes.

Response:

The Project prepares minutes for progress meetings when required for the specific circumstances. Variations among RE Offices regarding detail and content are expected and are a consequence of contract specific issues.

Since the Contractors schedule is the primary topic, and following RE 602 - Progress Review Meetings, the Schedule is the most relevant form of communication. The discussions which revolve around the schedule are subsidiary in nature to the transfer and review of the schedule data unless a conflict or dispute exists. In such cases, the minutes reflect comments and basic remarks. These remarks are confirmed by either formal correspondence or a follow-up meeting regarding the specific issue; any action items would be as a consequence of that follow-up. Decisions, justifications, and/or action items, deemed necessary by the RE regarding the outcome of progress schedule meetings, are typically included in other forms of communications such as PCNs, letters to or from the Contractor, and/or follow-up meetings, field inspections and/or walk-through.

The Project does believe the process can be improved by heightening the awareness of implementing required actions. Therefore the Project now includes the names of personnel responsible for the action and its required completion date.

Finding 2E: B/PB did not perform claims avoidance reviews.

Response:

The conversation with the Contract Administration Manager (CAM) focuses only on one of the requirements of Project Procedure 229 - Claims Management Program and Claims Management Review, (i.e. the assignment of dedicated resources to the program) which is an enhancement to the claims avoidance program which was authorized under Work Program 14. The basics of Project Procedure 229, including the requirements of the checklist, have been implemented. For example, the 75% engineering review evaluates opportunities for claims avoidance and has led to changes to the design to avoid claims. In addition, Right of Way requirements are continually evaluated to ensure proper access, staging, and work zones to avoid claims. Also, discussions are held prior to contract award with outside agencies (e.g. BTD, MPA, DEP, etc.) or abutters and third parties, to ensure that their requirements are incorporated in the contract documents to avoid post award claims.

The Claims Avoidance Program is an active part of the Project. In addition to the specific reviews in Project Procedure 229 - Claims Avoidance the Procurement Department regularly updates the Division I requirements; the Construction Department evaluates lump sum/unit price contracting options; and the Estimating Department regularly updates the Project databases to ensure that the most reliable quantity and pricing information is incorporated in the contracts.

Finding 3: B/PB has not provided the Commonwealth with an adequate record of construction issues and activity.

Response:

The Project utilizes an effective partnering program with our Contractors. The program emphasizes agreement on issues at the lowest levels possible in the organizations, agreement on more difficult ones through issue resolution, and the most difficult through Senior Partnering, Dispute Resolution Boards, Project Director Final Determinations, and although not used to date, litigation.

This record of construction issues and activities is documented in the overall modification process including the PCN, Record of Negotiation and subsequent review/approval process. The balance between a cost effective program and over documenting is well proven on the Project by the absence of litigation and the fact that approximately 75% of the modifications are under $50,000.

Implementation of the level of detail suggested in the report on these modifications would not be cost effective. The MHD actively participates in this process to ensure that the Commonwealth's interests are well preserved.

Finding 3A: **B/PB has not adequately documented the contract change order negotiation process.**

Response:

A major revision to Project Procedure 1206 - Construction Pending Change Notices was issued in February 1996 which incorporated the requirements of Project Procedure 1207 - Construction Contract Modifications. Failure to delete Project Procedure 1207 in February was an oversight by B/PB. Project Procedure 1207 was subsequently deleted on June 6, 1996.

MHD continuously reviews the Change Order negotiation process. The current review process focuses on the elimination of unnecessary or non-essential documentation. MHD Construction representatives participate in the change order process and agree on settlement amounts. MHD Legal also reviews the major modifications for compliance. Implementing the report suggestions is beyond the intent of the Record of Negotiation and would be detrimental to productive working relationship with Contractors and the negotiations process which has been conducted successfully within the partnering concept the Project utilizes.

The negotiation process may involve many sessions over an extended period of time with many changes in position. To document this would consume many hours when 75% of the modifications are under $50,000 and by procedure only require a markup of the contractors proposal for the Record of Negotiation, which is a cost effective method of documenting the agreement. The written Record of Negotiation documents the final agreement with the contractor and the reasons for arriving at that position. Agreement is acknowledged by the signatures to the process.

The FHWA has also reviewed the change process and found it to be compliant with their requirements.

Finding 3B: **Contract field staff have not adequately maintained Project photographs.**

Response:

The current RE 307 - Progress Photographs was revised to end the duplication of effort between the Contractor and the RE Office. It no longer requires the RE to regularly photograph construction progress. The procedure requires the contractor to provide photographs, properly dated and cited, on a monthly basis and provides the RE with the flexibility to photograph specific areas which in the RE's judgement are required to support future negotiations or claims disputes.

MHD has instructed B/PB to ensure that when photographs are taken the procedural requirements be followed for filing and storage.

Finding 3C: Staff did not produce and review Field Engineer Daily Reports (FEDR) in a timely manner.

Response:

The report identified that the FEDRs generally appeared to have been well prepared but that there is a problem regarding the time to produce and review the FEDR. Project Procedure 505 - Field Engineer's Daily Report does not specify production or review time. Subsequent to receiving the report the Project surveyed the RE offices and found that of the 22 RE offices, 17 produce FEDRs daily and 5 produce FEDRs weekly. It should be noted that the review process does not deprive the Resident Engineer/Lead Field Engineer of information, but rather documents the days activities. Information flow is continuous since the RE staffs are small, occupy the same office space, and are able to review field progress daily.

The report also indicated that B/PB committed to improve the content of the reports. MHD has instructed B/PB to perform more in-depth reviews of the FEDRs to ensure compliance with the procedural requirements.

Finding 3D: The deficiency reporting process needs improvement.

Response:

The deficiencies reported range widely in significance and impact, and corrective actions require varying amounts of resources. Therefore rigid parameters should not be used to gauge the quality of this management tool.

The Project has been successful in using the partnering concept with Contractors and many deficiencies are corrected by simply notifying the Contractor to comply with the requirements. This process has had substantial cost benefit by negating the need for voluminous documentation and making litigation costs negligible.

Contractor performance is not necessarily a function of the number of procedural deviations reported. The current procedures require that Contractor performance be documented at contract closeout via a report which addresses several aspects of performance. This procedure is currently being amended to include a 50% contract completion report or at any time that poor performance warrants such action. This is the proper program for evaluating contractor performance and is consistent with MHD statewide policy.

Deficiency Reports (DRs) are issued either when the issue is of a substantive nature or when the contractor is not timely in correcting the issues. There are numerous documented cases where the Project has withheld payment for DRs. Resolution of DRs is not necessarily a reason to assess the Contractor for accepting deficient work. The work must comply with the intent of the specifications and drawings or the Project cannot accept the work. Many equivalent material types, means and methods, and fabrication type issues arise during the execution of a project, the resolutions of which have no cost impact. Half of the DRs are resolved with cost impacts which experience indicates is reasonable.

Finding 4: Construction Management oversight needs improvement.

Many of the problems identified in our review could have been identified and resolved or avoided completely with adequate Project oversight. MassHighway lacks an adequate mechanism for monitoring and evaluating B/PB's construction management work performance.

Response:

Many of the issues identified in the report have been previously identified through Corrective Action Requests (CARs) issued by the QA Department and are the basis for the present improvements and opportunities for future improvements.

The MHD actively provides oversight of B/PB's performance as the construction manager. Through the Incentive Fee Program the MHD sets schedule, cost, quality and responsiveness criteria for B/PB and measures B/PB's performance against that criteria. The MHD organization is significantly involved in the critical areas to ensure that the Commonwealth's interests are protected. This is especially true in the development, and approval of change orders where the greatest opportunity exists for impacts on cost and schedule or result in fraud, waste and abuse.

Finding 4A: B/PB's Quality Assurance Program needs improvement

Response:

The QA Department oversight of Project activities may take the form of either a system review or a compliance audit. The terms are not interchangeable and each represents a separate focus. Clarification is presented below:

System Review - As stated in Project Procedure 302 - Quality Assurance Audit, System Review, and Surveillance Program a system review is defined as follows:

> "A documented activity performed by QA and assigned Project personnel comprising a review team. The Review Team evaluates previously identified processes or systems for their implementation and effectiveness. This evaluation includes flowcharts, interviews, and other problem identification and data gathering techniques. Variations from established procedures and recommendations for improvement are documented and formally presented to the responsible Department Manager for review and disposition".

The major focus of the system review is to evaluate the adequacy and effectiveness of the quality system in relation to management policies and objectives.

Compliance Audit - A compliance audit consists of:

> "A documented activity performed by QA in accordance with written procedure(s) or checklist(s) to verify by examination and evaluation of objective evidence, that elements of the Quality Program have been documented and effectively implemented".

The major focus of the compliance audit is to verify compliance with the documented policies and procedures. However, it should be noted that this focus does not preclude evaluating the system in place for effectiveness.

The report's statement that "Each contract office included in this office's sample had been the subject of a QA system review", is not accurate. Only one system review was performed and that was done early in the Project. The Project has focused on QA audits. Each contract office included in the sample, except for C07A5, was subject to a compliance audit which addressed system issues and procedural compliance issues. To clarify the process the QA Manager and staff schedule the audits at the beginning of the year, and the QA staff plans each audit prior to performing the audit.

In all cases, noncompliance with procedural requirements are documented. QA Audits/Reviews identified some of the same problems identified in the report and were the basis for the implemented improvements.

Noncompliance documentation defines the procedural requirement audited, describes the noncompliance with the requirement, identifies recommended corrective action, and requests that a response be provided that identifies corrective actions with completion dates of these actions. Audit reports/reviews are distributed to FHWA and MHD. Upon receipt of a response, the proposed corrective/preventive action is evaluated to ensure that the noncompliance was corrected, or justification is provided to eliminate the need to backfit (i.e. deletion of an unnecessary requirement from a procedure). The QA Auditor revisits the RE's Office and verifies that the corrective action has been implemented prior to closeout.

The overall performance of the RE Office is best defined in the narrative of the "Audited Activities Summary" section of the audit report. This section of the audit report identifies areas of compliance and noncompliance and provides an overall assessment of the RE's Office performance in critical activities. These activities were selected for audit based upon an evaluation of the relative importance of these functions and the past history of problems identified at the RE offices. In addition, the audits are performed at a level of detail to ensure that the RE office and the Contractor are performing their work activities in conformance with the contract requirements.

Performing other audits such as determining whether an adequate number of photos were taken, or an audit to determine whether a FEDR reflects what happened on a given day are not required. Reviews are already performed at the contract level, by the Lead Field Engineer and the RE to ensure that Field Engineer entries are accurate and photographs are taken when required.

Audit frequency is based on a pre-determined audit schedule. Contract field offices are subject to re-audit based on the Contract duration and size, the availability of QA staff, and the past audit results. When an audit identifies that a field office is in severe violation of procedures, corrective actions are initiated and monitored on a regular basis, and documented in the Quality Assurance/Closure section of the Corrective Action Report (CAR). Memos are sent to the Project Manager with copies to responsible department and Contract Manager identifying outstanding corrective actions necessary for CAR closeout, based upon the corrective action follow-ups.

Finding 4B: Mass Highway's oversight of B/PB's performance as the CA/T Project's construction manager needs improvement.

Response:

MHD believes that it has the appropriate staff to monitor B/PB and the Project. The MHD staff concentrates its efforts in those areas where the greatest risk exposure to the Commonwealth could occur and provides adequate oversight in other areas. This oversight is provided via attendance at meetings; involvement in contractual reviews/negotiations; review of programs, procedures, specifications, etc.; and providing direction when necessary. The MHD's role is oversight while B/PB's role is construction management.

Finding 5: Other issues.

E-mail

It appears that Mass Highway has not ensured that B/PB's practices with respect to the retention and filing of electronic mail (e-mail) comport with its own procedures or with state public record law.

Response:

The MHD is currently in the process of developing a memorandum which will be issued to all CA/T Project employees regarding the use of Electronic Mail ("E-Mail").

In general, this memorandum will clarify existing policy, as set forth in Project Procedure 239, governing the use of E-Mail. Specifically, it will indicate that E-Mail is intended to be used as a convenient means for the transmission of routine messages. In addition, it will note that E-Mail is not intended as a substitution for formal Project communication channels and procedures.

Cost Recovery

Our review identified a number of potential cost recovery issues from the change orders of the six sampled contracts. These cost recovery issues do not appear on MassHighway's cost recovery list.

Response:

The Scope of Services for the Management Consultant in Work Program

12 did not include participation in the MHD Cost Recovery Program (CRP). However, MHD and B/PB have incorporated such support in Work Program 14 Scope.

During Work Program 12, MHD transmitted its CRP procedure to B/PB with a request for B/PB to develop and implement a procedure relative to B/PB role within the MHD CRP Procedure. B/PB has initiated a portion of the Cost Recovery Program as identified in CMD 14. Procedures were developed and have been implemented by B/PB. Numerous situations have arisen that may have the potential of being a Cost Recovery Issue. However, B/PB does not make a determination on those issues. B/PB forwards those issues to the MHD's Cost Recovery Administrator who coordinates Cost Recovery Committee findings and recommendations. The Project is not aware of any Cost Recovery issues which have not been processed in accordance with the CRP but would request that those issues identified by the Inspector General's Office be shared with the MHD.

Backcharges

Our review identified a number of cases for the six sampled contracts where B/PB has backcharged a contractor or has supported one contractor backcharging another for errors or other issues. However, we have not found a single case where MassHighway has backcharged B/PB.

Response:

MHD has not necessarily processed specific backcharges against B/PB but has refused charges by B/PB thus obtaining the same benefit without the necessity of the paperwork. Additionally, MHD has reviewed and is currently reviewing potential cost recovery issues against B/PB. It should also be noted that B/PB is an extension of the MHD for execution of the management function and based on the specific set of circumstances acts on behalf and at the direction of MHD.

RE Hiring

Our review identified five cases where B/PB replaced the RE for reasons other than an RE voluntarily leaving B/PB's employ.

Response:

Only four out of 51 REs have been replaced. Two of the four were transferred to other positions on the Project when it developed that the specific contract package required stronger management skills than originally anticipated. The other two were replaced for performance issues.

Nineteen of 22 REs have previous construction contract field office experience averaging nine years. The contracts managed ranged from $6M to $900M. Most REs have very extensive field experience. With an average of 15.3 years of field experience before their first assignment as an RE on the CA/T Project. The least field experienced RE has 2.5 years. He is the RE on a relatively small demolition project, is now on his second such RE assignment, and has an excellent performance record on the CA/T Project.

The Project reviews RE performance and makes personnel adjustments as necessary. MHD is involved in the process and approves assignments of REs.

Requests for Information (RFI)

RE offices do not process contractor RFIs in a timely manner.

Response:

The most recent survey of 14 RE offices showed that the mean time to close RFIs was 20 days. The use of RFIs is very high: 3,162 RFIs having been closed. The time required to process RFIs is affected by several issues including complexity and urgency due to cost and schedule impact, and the SDC and the Project's engineering workload/priorities. The more critical issues that could have a cost or schedule impact are given a higher priority than those without impacts which is a cost effective approach. Although a mean time of 20 days to close a RFI is not unreasonable in this industry, the Project's objective is to make resolution as quickly and efficiently as possible.

RE Files

Contract field office staff provides, and to some extent the RE manual requires, redundancy in field office files. For example, one letter may be filed in many different files as a cross-reference. Also, the contract field offices inconsistently follow the file index system outlined in the RE Manual.

Response:

Field Office document logs have been kept manually. The Project is currently converting to an automated documentation control system that will greatly alleviate the need to maintain copies of the same document in separate files. This will also standardize the filing system.

Field Engineers Handbook

All of the Field Engineers interviewed by this office stated that the Field Engineers Inspection Handbook that B/PB provides to all field engineers is too general, not very useful, and too bulky to carry into the field.

Response:

We believe the handbook strikes the right balance between general applicability and the detail of its guidance. The handbook is sized to fit in the pockets of construction clothing.

Field engineers will be surveyed to assess the practical value of the handbook and to gather ideas for enhancing its usefulness. Many Field Engineers have significant field inspection experience and do not require a handbook from a day to day basis.

SECTION EIGHT

Technical Assistance Review for the Assessment of Fort Point Channel Testing Issues

Assistance Requested:	**September 6, 1994 (oral)**
Assistance Letter:	**October 7, 1994**
Project Responses:	**No letter of response[2]**

Note: The Project orally requested that this Office assess how the Project might address the Fort Point Channel testing issue under the scope of a contract between MassHighway and a consultant to examine the contractual relationship between Bechtel/Parsons Brinckerhoff (B/PB) and MassHighway. This Office responded by letter, dated October 7, 1994. This Office concluded that the plans as described by Project staff were within the scope of MassHighway's contract with the consultant. However, this Office later discovered that the Project had not disclosed all relevant facts and did not follow the course outlined to this Office. Under the changed circumstances and with additional information, this Office would have likely offered a different opinion to the Project.

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[2] The Project is not required to respond by letter to work products issued by this Office.

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The Commonwealth of Massachusetts
Office of the Inspector General
One Ashburton Place, Boston, MA 02108

ROBERT A. CERASOLI
INSPECTOR GENERAL

JOHN W. MCCORMACK
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TEL: 727-9140
FAX: 723-3540

October 7, 1994

Peter M. Zuk, Project Director
Central Artery/Tunnel Project
One South Station; Fourth Floor
Boston, Massachusetts 02110

Dear Mr. Zuk:

The purpose of this letter is to respond to the Deputy Project Director's oral request for an assessment as to how the Project might address the Fort Point Channel testing issue under the existing scope of the newly-awarded contract to examine the contractual arrangement between Bechtel/Parsons Brinckerhoff (B/PB) and MassHighway. We have concluded that the plans as described by your staff are within the scope of the current contract with Peterson Consulting Limited Partnership (Peterson).

We base our conclusion on the following information gleaned from telephone conversations with your staff and our review of the original request for proposal and the contract with Peterson:

- **The work to be performed by Peterson will not conflict with the efforts of the Cost Recovery Committee (established under the Project's Cost Recovery Procedure, dated August 5, 1994).** Kurt Dettman of your staff assured me during a recent telephone conversation that the Committee would first complete its independent cost recovery analysis of B/PB's allegedly inadequate soil testing procedures in the Fort Point Channel area. The Committee includes licensed engineering professionals. The Committee, through you or your designee, will forward the results of the analysis to Peterson for its inclusion in the management review.

- **The work you request Peterson to perform will not require Peterson to hire or subcontract for additional expertise; the team included in Peterson's winning proposal (and now incorporated in the contract) is sufficient to do the job.** Peterson will review the matter, including the Committee's findings, to see if the facts suggest or illustrate weaknesses or breakdowns in management systems aimed at holding B/PB accountable for work it was hired to do under the contract with MassHighway. The staff profile in Peterson's contract appears to include project managers and steering committee members who collectively possess the engineering and management experience to undertake the work without adding personnel.

- **The work you request Peterson to perform will be within the existing scope of services and budget for the one-year, $1 million contract you negotiated with Peterson.** The elements of the management review contract scope that relate most clearly to the Fort Point Channel-related work include in Phase I: "Management Controls . . . [including systems aimed at] eliminating vulnerabilities to fraud, waste and abuse" and "Communications/Information Systems . . . [including analyzing] the responsiveness, accuracy, and usefulness of such communication, information, and reporting systems." Each of these areas calls for Peterson to assess B/PB's performance, cite examples of problems and recommend improvements.

  Phase II focuses on MassHighway's capacity to "manage the manager." Peterson may conclude that issues underlying the Fort Point Channel dilemma are rooted in MassHighway's ability to oversee the Project and hold B/PB accountable for managing Project cost and schedule. If so, the matter might then be considered again from a different vantage in the Phase II review.

The Inspector General has on many occasions questioned MassHighway's capacity to hold B/PB accountable for managing Project design and construction within budget and on schedule. The management review presents a fine opportunity for MassHighway to examine this issue more closely. We urge you to take full advantage of the opportunity you have created.

Please feel free to contact me if we may be of further assistance or you have questions regarding this letter.

Sincerely,

Wendy Haynes

Wendy Haynes
Deputy Inspector General for
Contract Audit and Review

cc: William Flynn, Deputy Project Director

SECTION NINE

Technical Assistance Review of the Construction Bid Process

Assistance Requested:	November 21, 1994
Assistance Letter:	May 15, 1995, January 10, 1996
Project Responses:	May 17, 1996

Note: The Project requested that this Office provide assistance by reviewing the construction contract bid process and a Project proposal to reduce the process to 90 days. This Office responded in two phases: (1) a letter, dated May 15, 1995, and (2) the final letter, dated January 10, 1996.

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Massachusetts Highway Department
Central Artery/Tunnel

RECEIVED
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OFFICE OF
INSPECTOR GENERAL

November 21, 1994

Wendy Haynes
Deputy Inspector General
Office of Inspector General
One Ashburton Place
Boston, MA 02108

Dear Ms. Haynes:

Thank you for your commitment to provide technical assistance to the Project during fiscal year 1995 in the following areas: Administration and Controls, Fiscal Management, and Legal. The Project would appreciate your office assistance's reviewing the following specific matters related to these areas. The Project considers these matters of equal priority, however, we believe it would be most helpful if your Office reviewed these matters in the following order:

Administration and Controls:

Contract Formation Practices: evaluate current Project Procedures used in contract formation and administration including selection, use of contract formation teams, and office estimates.

Contract Invoicing and Payment Processes: evaluate the contract invoicing and payment procedures to ensure the appropriate controls are in place. This would include assuring that consistent approval standards are in place, assessing whether procedures are in place to detect and recoup overpayments, and to assess whether payments are processed in a timely manner.

Procurement Practices for Equipment Purchases: evaluate Project Procedures for equipment purchases to ensure open and competitive process and to ensure they incorporate the guidelines and protections of the state and federal purchasing regulations.

Financial Management:

Quarterly Assessment Procedure: Review current procedure for conducting quarterly assessment of B/PB's performance under the Work Program 12 contract.

Management Change Notice Process: Review current procedure for evaluating and approving Management Change Notices (MCNs) to

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the Work Program 12 contract including MHD independent assessment process.

Legal:

Cost Recovery Procedure: review and make recommendations on the Cost Recovery (formerly Errors and Omissions) Procedure. Provide technical assistance in resolving issues such as insurance notification, insurance deductible, and the possibility of developing and Alternative Dispute Resolution Program.

In addition to the specific areas listed above, the Project also requested your review of the Claims and Changes procedures. As you are aware, the Project's Management Review Consultant has been directed to review the Claims and Changes area. We request that your Office's technical assistance in this area, therefore, build upon the results of the Management Review Consultant at a later date. The Project also would like to renew our request for your Office's technical assistance on the issues related to the IPCS contract.

Thank you for making your Office available to respond to other requests for technical assistance as issues arise.

Sincerely,

Peter M. Zuk
Project Director

AD 2.4.2
094-3625

The Commonwealth of Massachusetts

Office of the Inspector General

One Ashburton Place, Boston, MA 02108

ROBERT A. CERASOLI
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May 15, 1995

Peter M. Zuk, Director
Central Artery/Tunnel Project
One South Station; Fourth Floor
Boston, Massachusetts 02110

Dear Mr. Zuk:

We are providing preliminary comments in response to your request for technical assistance from this Office concerning the Project's efforts to speed up the construction bid process. Your staff has briefed us on a proposal to establish a 90-day bid, evaluation, and award (BEA) cycle. We appreciate this opportunity to comment prospectively on your plans to streamline your operations.

As you know, the success of the Project's efforts -- that is, to put sound construction bid packages out on the street faster and to control costs -- depends in large part on whether all of the information needed for bidding is available by the time the Project advertises the construction bid package. We will, therefore, respond to your request for assistance in at least two phases:

> **Phase I:** Provide preliminary observations and recommendations on the 90-day procurement proposal. In this letter, we summarize those observations and request additional information to complete the first phase and initiate the second phase of our response to your request.
>
> **Phase II:** Complete input on the 90-day procurement proposal, and examine issues related to other factors that delay procurement, including the 75%-100% design phase. Interviews with staff and additional documents, including those requested in this letter, will be required in order for us to respond fully to your request. At present, we hope to complete this work in July. We will at that time determine, in cooperation with your staff, whether additional work phases are necessary.

SUMMARY OF 90-DAY PROCUREMENT PROPOSAL
(Based on information provided by Project staff.)

The draft proposal aims at reducing to 90 days the time between the milestones for plans, specifications, and estimates (PS&E), and notice to proceed (NTP), for construction contracts. The proposed pilot project targets CA/T construction contracts estimated at under $20 million as well as early construction contracts associated with the Fort Point Channel crossing. A key element in accomplishing the program goals will be stabilizing design at 75% and ensuring that preparation of the bid package begins earlier in the design process. If approved, the first contract to be bid under the pilot procurement program will be advertised in August 1995.

The proposal is being developed by a planning group comprised of MassHighway staff from the Administration and Controls section of the CA/T Project, and staff from Bechtel/Parsons Brinckerhoff (B/PB). Currently, six construction packages are slated for inclusion and at least seven others will be added to the pilot project after the new Project schedule ("Rev. 6") has been formally approved and released. If the proposal to achieve a 90-day BEA cycle between PS&E and NTP is successful during the early stages of the pilot, the Project plans to expand the 90-day procurement target to other CA/T Project construction contracts.

Included among the planning group's initial suggestions are several proposals to cut the procurement cycle time by authorizing the Project to undertake tasks now performed at 10 Park Plaza, such as physically entering data into the Massachusetts Management Accounting and Reporting System (MMARS) and tabulating bids. We have no objection to these types of remedies. For the most part, however, these proposals entail decisions about the organizational relationship between MassHighway and the CA/T Project. We will defer comment on those issues for the time being and concentrate our efforts on other matters more clearly within the control of CA/T Project staff.

PRELIMINARY OBSERVATIONS AND RECOMMENDATIONS

1. The Project should use caution in generalizing success on the pilot contracts to other CA/T construction contracts.

In basing its plan to shorten the procurement cycle on a handful of small contracts, the CA/T Project will not generate the data it will need eventually to expand the process to far larger, more complex, construction contracts on the CA/T Project. The package descriptions of the six contracts slated for participation in the program struck us as unusual and atypical. Descriptions of those contracts included *Artificial Fish Reef*, *Water Transportation Docking Facilities*, and *Oil & Hazardous Materials Incident Response*. Conceptually, it is hard to relate the procurement problems of these contracts with complex highway contracts for large dollar amounts.

Project staff reasoned that if a 90-day cycle could not be achieved on these smaller, less complex contracts, then it probably would not be achieved on the larger contracts. That makes sense to us; however, if the Project is successful in its commendable efforts to reduce the procurement cycle on these smaller contracts, we recommend several cautionary measures: (i) consider whether the success was due to special attention to the pilot contracts rather than needed systemic improvements; (ii) initially select only one or two of the larger contracts, preferably more similar to other construction contracts than the current six, for the accelerated schedule; and (iii) evaluate the results and apply the lessons learned to subsequent efforts. Although this approach may not produce the results as quickly as you might like, it will reduce the likelihood of expensive, time-consuming contract addenda to rectify unanticipated problems created by an accelerated cycle.

As a side note, the inclusion of the early contracts for the Fort Point Channel crossing is troubling. We question the wisdom of including in a pilot project such as this a contract with a history of problems, including allegedly inadequate soils testing. A pilot project is not an appropriate vehicle for pushing troubled contracts through the BEA cycle.

2. **The 90-day procurement cycle is only a small slice of the construction procurement cycle; the focus on this segment of the cycle does not account for delays and problems that may be caused by incomplete PS&Es, late design completion, lack of permits, and other of B/PB's construction management responsibilities.**

The backbone of any plan to shorten the construction procurement cycle must address the core problem. In this case, that may reside in the 75%-100% design phase. For the 90-day procurement program to succeed, the CA/T Project must make an unwavering commitment to ensure that its section design consultants prepare and produce full and complete bid packages. I recommend that you ensure close coordination and full communication between the planners of the 90-day procurement process and the planners of the 75%-100% design process. Although we have not yet fully examined the data, we have reviewed certain CA/T construction contracts and have commented on problems previously.[1]

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[1] For example:

- On April 15, 1994, this Office informed the Project of its concerns with a $414,700 change order to the C05A1 - Immersed Tube Tunnel Contract, to cover the cost of applying foam to control odor from harbor sediment deposited on Governor's Island.

- On August 16, 1994, this Office informed the Project of its concerns with large change orders and contract administration problems on the C07B1 - Porter Street Outfall Sewer Relocation Construction Contract.

3. **The CA/T Project should analyze and identify elements beyond the procurement cycle, *per se*, that delay getting contracts out on the street.**

Based on the material we have reviewed so far, it would appear that the CA/T Project has not fully examined its current construction contract procurement cycle to ascertain the length of each phase of the cycle and where problems occur. Yet some sources of delay, such as addenda, may be thematic, occur repeatedly, and originate in areas outside the traditional scope of procurement staff control. The Project would benefit from a careful analysis of the data which underlie the straight line projections illustrated in B/PB's preliminary procurement cycle assessment. The materials we have requested in the attachment to this letter will help us provide you with some of this analysis.

4. **Update project procedures to reflect new rules and expectations.**

CA/T staff have stated that their goal is to reduce to 90 the number of days between NTP and PS&E, without sacrificing the integrity of the procurement process. Even at this preliminary level of review, this Office has the expectation that any deviation from Project Procedure No. 704 as a result of this pilot project will be documented in writing and approved by MassHighway and the Federal Highway Administration. We would also recommend that prospective bidders be advised of the new target. Bidders have come to expect a protracted procurement process.

5. **Distinguish between building and public works projects in advance of implementing the 90-day program.**

Apparently in these early stages of planning for a 90-day BEA cycle, a distinction has not been made between contracts for public buildings which must be bid under M.G.L. c.149, and public works contracts that are governed by M.G.L. c.30, §39M. The more rigorous demands of the public bid laws governing buildings could impact the Project's plans; we advise you to distinguish between the various contracts and factor in the additional requirements of M.G.L. c.149.

# \# \#

The material provided so far raises a number of questions that can only be answered by additional materials and interviews with key CA/T Project staff. The following are among those questions:

- What changes to standard advertising procedures are proposed for contracts in the 90-day procurement program?

- What are the underlying data from CA/T construction contracts on which the goals of the proposed program are based, and what trends and problems are indicated by that data?

- What if any new problems are created by stabilizing design at 75% and ensuring that preparation of the bid package begins earlier in the design process?

We appreciate the continued cooperation and assistance of you and your staff in scheduling additional interviews and in responding to the attached document request. Please do not hesitate to contact me or Helen Flaster if you have any questions regarding this request or these preliminary comments.

Sincerely,

Wendy Haynes
Deputy Inspector General for
Contract Audit and Review

Ron Grenier, Director of Administration & Controls, MassHighway-CA/T
Marie Hayman, Manager of Financial Controls, MassHighway-CA/T
Susan Cobb, Counsel

Attachment: Document Request

ATTACHMENT -- DOCUMENT REQUEST

Please provide the following information pertaining to the CA/T Project, on or before Friday, May 26, 1995:

(1) A listing of the forty-one Central Artery/Tunnel (CA/T) construction contracts that were included in the BEA Statistics that were summarized in a chart captioned "Proposed 90-day Procurement Cycle," including the following for each contract:

  (a) contract number;
  (b) award date;
  (c) name of the contractor;
  (d) title of the contract; and
  (e) contract amount.

(2) For each contract listed in response to (1), above, a copy of the scope of services as recorded in the contract.

(3) For each contract listed in response to (1) above, please provide a chronology of the bid, evaluation, and award cycle, including the date that the bid package was completed, the date of the bid opening, and the date(s) of any and all addenda.

(4) A list of the contract numbers and dollar amounts for construction contracts on the CA/T Project that have a dollar value of $20 million or less.

(5) A list of the contract numbers and dollar amounts of the early contracts for Fort Point Channel that will be included in the proposed 90-day BEA cycle.

(6) A current listing of local and national periodicals in which construction contracts for the CA/T Project are advertised.

(7) A listing of local and national periodicals in which construction contracts for the CA/T Project will be advertised under the 90-day pilot project.

(8) All documents, memoranda, notes and correspondence, whether formal or informal, including memoranda of meetings and internal memoranda, pertaining to the evaluation of the data presented in the chart captioned Proposed 90-day Procurement Cycle.

(9) All documents, memoranda, notes and correspondence, whether formal or informal, including memoranda of meetings and internal memoranda, pertaining to the evaluation of data for the 75% -100% design phase.

The Commonwealth of Massachusetts
Office of the Inspector General
One Ashburton Place, Boston, MA 02108

ROBERT A. CERASOLI
INSPECTOR GENERAL

JOHN W. McCORMACK
STATE OFFICE BUILDING
ROOM 1311
TEL. 727-9140
FAX 723-3540

January 10, 1996

Peter M. Zuk, Director
Central Artery/Tunnel Project
One South Station; Fourth Floor
Boston, Massachusetts 02110

Dear Mr. Zuk:

Attached to this letter is the second part of our response to the Project's request for technical assistance in accelerating the construction contract procurement cycle. We appreciate the courtesy and cooperation of your staff in producing documents, making data available, and providing information during interviews.

Phase I of our review was completed by letter to the Project, dated May 15, 1995. In the letter, we provided preliminary comments on the Project's draft proposal to reduce to 90 days the time between plans, specifications, and estimates (PS&E), and notice to proceed (NTP) for construction contracts estimated at under $20 million as well as early construction contracts associated with the Fort Point Channel crossing.

This response, which amplifies some of our preliminary observations and examines data underlying the Project's pilot proposal, is the second and final phase of our review. First, we analyze data for the 41 contracts which formed the basis of the 90-day proposal. Second, we highlight certain elements beyond the control of your procurement staff that have delayed getting construction contracts out on the street.

While the effort to streamline the process is commendable, we caution Project management against premising its construction schedule on this radically reduced time frame until it has been consistently demonstrated that the 90-day target can be achieved. And to achieve the objective will require a significant change in the way the Project does business: the practice of using addenda to manage design and construction after the work is advertised must be curtailed to stay on schedule.

With phase II of our review, we consider our work on the Project's technical assistance request to be substantially complete. We hope that our additional analysis proves useful to you. Please contact me or Helen Flaster, project leader for this review, if you have any questions or we may be of further assistance to you.

Sincerely,

Wendy Haynes
Deputy Inspector General
for Contract Audit and Review

Enclosure

cc: Ron Grenier, Director of Administration & Controls, MassHighway-CA/T
Marie Hayman, Manager of Financial Controls, MassHighway-CA/T
Susan D. Cobb, Counsel, MassHighway-CA/T

Commonwealth of Massachusetts
Office of the Inspector General
Response to a Request for Technical Assistance
from MassHighway-Central Artery/Tunnel Project

January 10, 1996

THE CA/T PROJECT'S "90-DAY" PROPOSAL - PHASE II

This is the second and final phase of our response to the Central Artery/Tunnel (CA/T) Project's request for technical assistance with efforts to accelerate the construction contract procurement cycle. Phase I was completed by a letter to the Project of May 15, 1995, in which we commented on a draft proposal to reduce to 90 days the time between plans, specifications, and estimates (PS&E) and notice to proceed (NTP) for construction contracts estimated at under $20 million as well as early construction contracts associated with the Fort Point Channel crossing. In the letter, we urged the Project to do the following:

(1) Use caution in generalizing success on the pilot contracts to other construction contracts.

(2) Consider that the 90-day program does not directly address delays and problems that may be caused by incomplete PS&Es, late design completion, lack of permits, and other aspects of Bechtel/Parsons Brinckerhoff's (B/PB) construction management responsibilities.

(3) Analyze and identify elements beyond the procurement cycle, *per se*, that delay getting contracts out on the street.

(4) Update project procedures to reflect new rules and expectations.

(5) Distinguish between building and public works projects in advance of implementing the 90-day program.

The second phase of our review amplifies several of the points that we made in the phase I letter, and substantially completes our response to this technical assistance request.

BACKGROUND AND METHODOLOGY

A planning group, which included Project staff from B/PB and MassHighway's Administration and Controls section, has developed a pilot proposal to reduce the construction procurement cycle to 90 days. Before the planning group completed its proposal, B/PB assessed the bid, evaluation and award (BEA) cycle for 41 CA/T construction contracts. According to MassHighway Project staff, B/PB's preliminary assessment included about 80 percent of the CA/T construction contracts that were underway at the time.[1] (See Attachment 1.) In our phase I letter, we noted that the effort would benefit from a careful analysis of the data which underlie the straight line graphs in B/PB's preliminary procurement cycle assessment. In this phase II review, we provide some of that analysis.

We judgmentally selected 14 contracts that appear representative of the range of Project contracts in terms of dollar amounts and complexity. As can be seen in Attachment 2, the contracts selected are also geographically diverse. We considered the number of days each contract package took to go from PS&E to NTP, and the number of addenda issued for each contract between those milestones. Like most of the contracts slated for inclusion in the 90-day proposal, the contract value of ten of the 14 contracts was $20 million or less. The 14 contracts included several types of construction contract packages, including those for demolition and utilities relocation. (See Attachment 2.) We graphed the construction bid cycle and interviewed B/PB staff responsible for five of the 14 contracts in our sample. And finally, we examined the data we had collected for recurring sources of delay and opportunities to save time in the construction bid cycle.

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[1] Project staff were unable to explain the basis for selecting the contracts.

OBSERVATIONS

Many of the challenges facing MassHighway in attempting to reduce the construction procurement cycle are inherent in the complex, multi-phased approach B/PB has used to design and construct the Project. B/PB's approach entails simultaneous planning, design and construction in various sections of the Project. This approach is commonly referred to as "fast-tracking." A change or delay in one area or contract on the Project can profoundly impact other plans and schedules, as well as the contract in which the change originally occurred.

As can be seen in the examples cited in this document, the nature of the Project construction strategy and the multiplicity of participant agencies and approval stages requires scrupulous attention to planning, coordination and scheduling. B/PB and MassHighway staff have underscored the importance of minimizing design changes after the 75 percent design phase. To that we would add the need to insure that necessary reviews, permits and approvals are obtained well before MassHighway advertises construction bid packages. Improvements in these two areas should increase the Project's ability to achieve its goal of reducing the time consumed by the construction procurement cycle to 90 days.

Factors that may impede efforts to streamline operations are highlighted throughout the remainder of this document. As MassHighway's construction manager, B/PB should be held accountable for bringing the Project in on schedule and within budget. Improved construction management -- as well as MassHighway's willingness to rein in late-stage design changes -- are critical to the success of these efforts.

The large gap between past results and the current goal requires attention and a significant change in the Project's approach to design and construction management if these goals are to be achieved.[2] Closing the gap between past experience and the 90-day goal requires a detailed plan of action and the commitment of top management. For the 41 Project construction contract packages that were included in B/PB's preliminary assessment, the 90-day proposal includes a summary chart of bid, evaluation, and award (BEA) statistics. (Attachment 1). B/PB at one time targeted 158 days as an achievable goal, but according to B/PB's data, only four of the 41 contracts met that goal. B/PB's chart also shows that contracts for more than $100 million went through the BEA cycle in an average of 231 days, while contracts for less than $50 million averaged 202 days to complete the BEA cycle. B/PB's chart further shows that 11 contracts took more than 300 days to go through the BEA cycle.

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[2] A management review commissioned by MassHighway contains recommendations about how to approach Project management differently. *See*, "Management Review Report" by Peterson Consulting Limited Partnership and others, September 1995.

The Project has proposed ninety days as the new target for completing the BEA cycle for construction contracts. It is unclear from the documents provided by the Project how B/PB intended to achieve the 90-day goal when it had been unsuccessful in meeting its earlier target of 158 days.

As shown in Chart A, below, the Project allocated 14 days for a contract to go from PS&E to advertisement. This is about one-tenth of the 139 average number of days it took for the 14 contracts that we reviewed to go through the same part of the bid cycle.

"Chart A"

DURATION (DAYS)	PS&E to ADVERTISEMENT	BID PERIOD	CONTRACT AWARD	TOTAL DURATION (DAYS) PS&E TO NTP
90 (proposed)	14	41	44	90[3]
292 (average for 14 contracts)	139	106	58	292

Project staff stated during interviews that management plans to accomplish its goal (90-day cycle) by developing the bid package at the 100 percent design stage, about 120 days earlier than current practice. However, the Project has not detailed a clear strategy for accomplishing that goal.

Project staff have already pointed to the number of addenda to construction bid packages as a major impediment to meeting schedules and controlling costs. According to Project staff, they plan to avoid addenda, although we have seen no written strategy for reducing Project dependence on addenda. Moreover, the Project provided no evidence that B/PB had analyzed either the amount of time addenda consumed during the BEA cycle or the circumstances underlying the apparent need for multiple addenda after a contract had been advertised.

Our analysis showed that the 14 contracts we reviewed averaged six addenda. (See Attachment 2.) On average, it took about 306 days for each of the 14 contracts to go from PS&E to NTP. On average, it took 139 days to go from PS&E to advertisement in the *Central Register*, and 106 days to go from advertisement to bid opening.

During meetings with Project staff, we were informed that their objective is to reduce the number of addenda *per* construction contract package to one: the minutes of the pre-bid meeting. As will be discussed in the next section, the Project cannot achieve that objective if it persists in using addenda to finalize actions -- such as permitting, design, traffic flow planning -- that should have been completed before the work was advertised.

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[3] The numbers add to 89, but apparently B/PB rounded to 90 for purposes of its proposal.

We know of no statutory or regulatory constraint that would preclude the Project from achieving its 90-day goal for completing the construction bid cycle.

If the Project is to come anywhere near being able to attain its objective of one addendum per contract, it must dramatically curtail its practice of advertising contract packages in advance of deciding the scope of services. We conducted interviews in connection with five of the 14 construction contracts in our sample and reviewed pertinent documents obtained from Project files. Our review showed that construction contract packages are advertised well before they are ready to go out to bid. We found several instances in which MassHighway issued addenda to finalize the scope of work rather than waiting to advertise until the design was completed. Two examples illustrate the practice particularly well: the I-93 Northbound Tunnel-Atlantic Avenue contract and the temporary ramps at the World Trade Center.

In the first example (C11A1, I-93 Northbound Tunnel-Atlantic Avenue), the Project did not adequately coordinate ahead of time with the Massachusetts Bay Transportation Authority (MBTA) and, thus, set the stage for numerous bid addenda and delays. During an interview, B/PB staff told us that negotiations between the Project and the MBTA led to combining work on the MBTA Transitway with C11A1. B/PB staff commented that there was an inherent savings of time and money in combining the two contracts because the street would not have to be ripped up twice. According to B/PB staff, the advantages of combining the C11A1 contract with the MBTA work included savings of $30 - $40 million dollars.

Although the MBTA portion of the contract was behind schedule, MassHighway decided to put the contract out to bid in order to maintain the Project schedule. As a result, only 26 days elapsed between PS&E and advertisement. In part as a result of that decision, MassHighway issued 10 addenda over a period of about 10 months between advertisement and bid opening. It took another 461 days between advertisement and NTP. A total of 487 days elapsed between PS&E and NTP.

B/PB staff told us that the fifth addendum on C11A1 consisted of a completely new bid package. With a price tag of about $378 million, the Atlantic Avenue contract is large even by Project standards, and the bid package included thousands of drawings. In this case, the Project should have coordinated with the MBTA earlier, or waited to go out to bid until the package was complete. Long bid periods and extensive changes in addenda discourage competition by forcing out firms that might otherwise have bid on the work.

B/PB staff we interviewed acknowledged that addenda are routinely use to "manage" the scope of contracts. The temporary ramps at the World Trade Center (C01A4) provides another example of the Project's construction management practices. B/PB staff told us that a decision was made to maintain schedule and go out to bid, knowing that the MassPort Haul Road would be added to the package by the first addendum to complete the scope of services.

In these and other instances, the Project contributes to a climate where bidders have no reason to believe that what's advertised will be what they finally bid. The Project may be fostering an environment that discourages competition. As we noted in our earlier letter, the Project will need to advise or re-educate bidders to the new bidding environment that will result from a successful 90-day construction procurement cycle.

Lessons learned from traffic monitoring and planning issues could assist the Project in other multi-agency negotiations and review. On some of the early construction contracts, the Project experienced delays in obtaining comment and approval from other agencies. For instance, according to a B/PB area manager we interviewed, the City of Boston Traffic Department did not provide thorough comment until the PS&E stage for C14C2 (Utility Relocation, Fulton Street). While the package was out to bid, the Project had to address the City's comments. This necessitated revisions to traffic plans, and contributed to months of delay in completing the BEA cycle for the contract. Further delays were caused when the Federal Highway Administration did not comment until after the conclusion of the design period.

During an interview, B/PB staff told us that the Fulton Street utility relocation was the first contract where some kind of formal process was worked out with the City of Boston Traffic Department, a key player in construction management and planning because of downtown traffic issues that must be handled before major construction begins on the Central Artery. The negotiation process with the City was further used and refined during work on the Atlantic Avenue contract during a series of about 70 meetings (also referred to as "workshops").

Through those workshops, the City of Boston and the Project have established a process for working on traffic planning and mitigation issues. The Project has incorporated the traffic planning and mitigation process with the City in various Project procedures and memoranda concerning final designers' responsibilities. The Project should consider using this workshop model for other planning and review issues and should remain alert to the impact of design review by other agencies on the 90-day procurement cycle goals.

CONCLUSIONS

While the effort to streamline the construction bid process is commendable, we caution the Project against premising its construction schedule on this radically reduced time frame until it has consistently demonstrated that the 90-day goal can be achieved. Nothing we have observed leads us to believe that the Project can meet the target absent significant improvements in planning and coordination, combined with a commitment to completing designs before a contract is advertised rather than using addenda to work out design issues that should have been resolved much earlier in the process. Project management improvements in this regard may well benefit the public in yet another area: a reduction in change orders after the contractor has begun work.

The Project deserves credit for attempting to accelerate the BEA cycle. Early preparation of the bid package is the crux of the 90-day proposal. Enormous savings of time and money could result. Implementing the 90-day proposal is an opportunity for the Project's construction manager to realize savings on behalf of the Project and the Commonwealth.

We encourage Project managers to distinguish between building and public works projects as they work to meet the 90-day target. The differing legal requirements (such as prequalification and filed subbids) should be handled ahead of time and appropriately factored into the BEA cycle. The Project should also document in official project procedures any changes in construction procurement, such as advertising requirements. And we again caution the Project to alert prospective bidders to changes anticipated in the bid process. The construction community has been accustomed to a protracted bid cycle and has been trained to anticipate multiple addenda to the bid specifications. Success in achieving the Project's new goal would create a significant improvement in the bid environment.

The Project is to be commended for these efforts to streamline its operations by targeting the construction contract bid cycle. We hope that our comments will assist the Project in achieving its goal.

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Massachusetts Highway Department
Central Artery/Tunnel

RECEIVED

MAY 20 1996

May 17, 1996

Robert A. Cerasoli
Inspector General
Office of the Inspector General
One Ashburton Place
Boston, MA 02110

Dear Mr. Cerasoli:

The attached materials are forwarded in response to the Third Quarter Status Report (January 14, 1996 - April 15, 1996) dated April 16, 1996.

We have identified those items which you have brought to our attention and either indicated the status of the actions involved or attached the requested documents.

If you should have any questions, or require additional information regarding these matters, my point of contact is William J. Smith at 951-6105.

MASSACHUSETTS HIGHWAY DEPARTMENT

Sincerely,

Peter M. Zuk
Project Director

AD-2.4.2
096-1597

One South Station • Boston • Massachusetts • 02110 • Phone 617-951-6000 • Fax 617-951-0897

Recommendations and Information Requests - contained in Status Report (January 14, 1996 - April 15, 1996) dated 04/16/96

I. Technical Assistance Requests:

1. 90 Day BEA Cycle - We appreciate your review of the Project's proposed "90 Day" construction contract bid cycle (See Appendix A Page 3 of 12). As you point out, it is predicated upon design completion which has historically been difficult to accomplish. We are equally aware of the distinctions imposed by Chapter 149 building contracts.

   To date, the Project has applied the 90 Day concept to three small contracts: C04A4 (Permanent Sewage Pump Station), C21H1 (Water Transportation Docking Facility) and R01A5 (Partial Fisheries Coop Building Demolition). While we did not achieve the goal of 90 Days, we determined that we can shorten the procurement cycle on small contracts. C04A4 achieved NTP in 151 days, for a value of $2,553,120. From this experience, it appears that the applicability of the 90 Day concept to $20 million contracts, or to any contracts in the Fort Point Channel area, would require further evaluation.

   In summary, we intend to continue our efforts to shorten the procurement cycle of construction contracts on a case by case basis, and after careful review. The efficiencies in shortening the procurement cycle achieved on smaller contracts will be used, whenever applicable, on larger contracts.

2. DeLeuw Cather and C22A2 - (See Appendix A Page 3 of 12). Our response to your report will be forwarded to you on or before May 24, 1996.

3. Contract Waiver Process - (See Appendix A Page 4 of 12). We appreciate your providing us with a copy of this correspondence. This letter unfortunately was not entered in our correspondence control system. Although, the CA/T Project employees referenced as receiving copies remember many discussions of the subject matter they had no recollection of receiving this particular piece of correspondence. This response to our request contains numerous recommendations and issues which require our careful consideration. We will respond to this letter in due course.

II. Findings, Recommendations, and Corrective Actions

1. Value Engineering Change Proposals (VECP) Report - Two meetings as referenced (See Appendix A Page 6 of 12) in your quarterly report have occurred. We look forward to receipt of the draft of your final report on the subject.

2. Fixed Asset Management - (See Appendix A Page 8 of 12) The written opinion prepared by Peterson Consulting, Inc. has not been received by the CA/T Project. Once received, a copy will be forwarded to your office. A copy of draft Project Procedure 804 - Project Asset Inventory and Control which addresses surplus assets is attached **(See Attachment A)**. Please note this procedure is under MHD review and modifications are expected.

3. Survey Services - (See Appendix A Page 8 of 12) As requested attached are "...all advertisements, including but not limited to notices to contractors; and the contract number, contract value, name of contractor, scope of services, and status of each executed contract pending award." **(See Attachment B)**.

III. Statutory Responsibilities - Section 11 of chapter 102 of the Acts of 1994

(See Appendix A Page 12 of 12) No transmittal request.

IV. Administration

(See Appendix A Page 12 of 12) No transmittal request.

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SECTION TEN

Technical Assistance Review of Equipment Procurement Practices

Assistance Requested:	November 21, 1994
Assistance Letter:	January 30, 1996
Project Responses:	March 29, 1996

Note: The Project requested that this Office provide assistance by reviewing equipment procurement practices to ensure that staff followed appropriate procurement regulations and used State blanket contracts when practical. By letter, dated January 30,1996, this Office responded to the Project request. The Project responded by letter, dated March 29, 1996.

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Massachusetts Highway Department
Central Artery/Tunnel

RECEIVED
[illegible] 1994
OFFICE OF
INSPECTOR GENERAL

November 21, 1994

Wendy Haynes
Deputy Inspector General
Office of Inspector General
One Ashburton Place
Boston, MA 02108

Dear Ms. Haynes:

Thank you for your commitment to provide technical assistance to the Project during fiscal year 1995 in the following areas: Administration and Controls, Fiscal Management, and Legal. The Project would appreciate your office assistance's reviewing the following specific matters related to these areas. The Project considers these matters of equal priority, however, we believe it would be most helpful if your Office reviewed these matters in the following order:

Administration and Controls:

Contract Formation Practices: evaluate current Project Procedures used in contract formation and administration including selection, use of contract formation teams, and office estimates.

Contract Invoicing and Payment Processes: evaluate the contract invoicing and payment procedures to ensure the appropriate controls are in place. This would include assuring that consistent approval standards are in place, assessing whether procedures are in place to detect and recoup overpayments, and to assess whether payments are processed in a timely manner.

Procurement Practices for Equipment Purchases: evaluate Project Procedures for equipment purchases to ensure open and competitive process and to ensure they incorporate the guidelines and protections of the state and federal purchasing regulations.

Financial Management:

Quarterly Assessment Procedure: Review current procedure for conducting quarterly assessment of B/PB's performance under the Work Program 12 contract.

Management Change Notice Process: Review current procedure for evaluating and approving Management Change Notices (MCNs) to

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the Work Program 12 contract including MHD independent assessment process.

Legal:

Cost Recovery Procedure: review and make recommendations on the Cost Recovery (formerly Errors and Omissions) Procedure. Provide technical assistance in resolving issues such as insurance notification, insurance deductible, and the possibility of developing and Alternative Dispute Resolution Program.

In addition to the specific areas listed above, the Project also requested your review of the Claims and Changes procedures. As you are aware, the Project's Management Review Consultant has been directed to review the Claims and Changes area. We request that your Office's technical assistance in this area, therefore, build upon the results of the Management Review Consultant at a later date. The Project also would like to renew our request for your Office's technical assistance on the issues related to the IPCS contract.

Thank you for making your Office available to respond to other requests for technical assistance as issues arise.

Sincerely,

Peter M. Zuk
Project Director

AD 2.4.2
094-3625

The Commonwealth of Massachusetts
Office of the Inspector General
One Ashburton Place, Boston, MA 02108

ROBERT A. CERASOLI
INSPECTOR GENERAL

JOHN W McCORMACK
STATE OFFICE BUILDING
ROOM 1311
TEL: 727-9140
FAX. 723-3540

January 30, 1996

Peter M. Zuk, Director
Central Artery/Tunnel Project
One South Station, Fourth Floor
Boston, Massachusetts 02110

Dear Mr. Zuk:

The purpose of this letter is to provide you with the results of this Office's review in response to the Central Artery/Tunnel Project's (CA/T Project) request for technical assistance on procurement practices for equipment purchases. Specifically, MassHighway asked this Office to evaluate the CA/T Project's: (1) procedures to provide open and fair competition in accordance with state and federal purchasing regulations, and (2) use of blanket agreements for its recurring equipment and supplies requirements. Our findings and conclusions are detailed on the following pages.

In 1985 MassHighway selected the joint venture of Bechtel/Parsons Brinckerhoff (B/PB) to manage the $8 billion CA/T Project. In addition to overall project management, B/PB is charged with preliminary design, design management, and construction management. Under a series of contracts, the most recent a two-year extended contract valued at approximately $373 million ending February 29, 1996, B/PB is also responsible for purchasing equipment, supplies, and services used by the CA/T Project. These assets purchased by the CA/T Project are state-owned, but are in the care and custody of B/PB.

For this review, we examined the CA/T Project's procedures for purchases of equipment and supplies. We reviewed 32 blanket agreements, plus amendments, between B/PB and various vendors. We compared and contrasted those agreements with 17 Department of Procurement and General Services' (DPGS) state-wide blanket agreements offering similar or the same commodities and services. Our examination also included interviews with key staff from MassHighway. And, we applied state laws and regulations that govern the acquisition of assets of the Commonwealth.

Commodity Procurement Policies and Procedures, 802 CMR 2.00,[1] is the relevant regulation adopted under the authority of M.G.L. c. 7, §22. The purpose of this regulation is to ensure that goods, supplies, equipment, and services are procured by the departments of the Commonwealth in a manner that is consistent with open and fair competition.

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[1] 802 CMR 2.0 dated 12/1/95, effective 11/7/95.

1. *THE CA/T PROJECT PROCURES SOME COMMODITIES WITHOUT FOLLOWING STATE BIDDING PRACTICES.* In at least one instance B/PB awarded a blanket contract to a vendor without benefit of competitive bids, which is in violation of M.G.L. c. 7, §22. In November 1992 B/PB awarded Oce-Bruning, Inc. a $25,000 contract to provide the Project with office and engineering supplies. Between January 1993 and April 1995, the original contract was amended eight times to increase funds to its current value, $440,000

In this Office's December 1995 report on the CA/T Project's asset management system,[2] the Inspector General criticized a similar violation of M.G.L. c. 7, §22. Specifically, our report mentioned that in one case the CA/T Project's purchase of computer hardware and software did not comply with sole source procurement regulations for vendor selection. 802 CMR 2.74 states, in part, that a contract may be awarded to a vendor for the purchase of a specified good, supply, equipment or service without competition if "[a] reasonably diligent investigation has revealed that the item required is the only item capable of meeting the needs of the procuring [d]epartment; and that particular [v]endor is the only one who can meet the applicable [t]echnical and [b]usiness [s]pecifications. . . ." There was no written evidence justifying the sole source purchase of office and engineering supplies from Oce-Bruning in the documents provided to this Office.

Our report also indicated that Project Procedure 602 provides adequate guidelines to ensure fair competition in the bidding process. The CA/T Project can correct sole source procurement deficiencies by simply bringing its practices into compliance with its written procedure. The federal government reimburses the Commonwealth for approximately 85 percent of CA/T Project costs. This funding could be compromised if B/PB continues to circumvent state laws and regulations.

Moreover, beginning in January 1994 state-wide blanket agreements existed for office and engineering supplies. In particular, the DPGS awarded A-Copy a state-wide contract to provide the Commonwealth with Oce-Bruning supplies; therefore, CA/T Project contract amendments after January 1994, totaling $225,000, were unnecessary.

The Inspector General reiterates his previous recommendations: the Project should (a) follow state laws and regulations for its procurement activities; and, the Project should (b) bring its practices into compliance with written project procedures.

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[2] *Report on the Massachusetts Highway Department's Asset Management System for the Central Artery/Third Harbor Tunnel Project.* Publication # 17776-45-500-12/95-IGO.

2. *WE FOUND NO EVIDENCE THAT THE CA/T PROJECT USES EXISTING STATE BLANKET AGREEMENTS FOR ITS ROUTINE PROCUREMENT REQUIREMENTS.* The DPGS has existing contracts for film and photographic supplies, facsimile machines, copiers, copy paper and copier toner, and laser printers and supplies. Instead of using the existing state blanket agreements, B/PB initiated its own procurement action for the same equipment and supplies.

One typical example, out of 15 blanket contracts we examined, is B/PB's purchase of copy paper for Project-wide use. From April 1993 through April 1995, including amendments for time extensions and increases in contract value, B/PB awarded competitively bid contracts for copy paper to two vendors, Lindenmeyr Monroe, and Nelson Copy, totaling $271,705.

During this same time period the DPGS had already awarded state-wide blanket contracts to five vendors who would provide departments and agencies with copier paper stock. In fact, Lindenmeyr Monroe was one of the vendors awarded a DPGS contract. According to DPGS documents, these contracts were competitively priced, the commodities provided quality performance, and the vendors offered timely delivery service. These characteristics parallel those required by the CA/T Project's vendor contracts for copy paper.

This Office recommends that the Project use the state's purchasing contracts, when they are cost effective, by coordinating B/PB's procurement plan with the DPGS. DPGS issues an index of all state-wide bid awards about every two months including copies of new blanket contracts.

3. *THE CA/T PROJECT DOES NOT APPEAR TO HAVE ADEQUATE PLANS TO PREVENT MULTIPLE CONCURRENT AGREEMENTS WITH THE SAME VENDOR, OR WITH DIFFERENT VENDORS, OFFERING THE SAME SERVICE.* We reviewed 12 blanket agreements between B/PB and several vendors who provided photographic reproduction services to the Project between September 1993 and May 1995. In some cases the agreements overlapped one another providing the same service during the same time frame.

For instance, on June 1, 1994 B/PB awarded a $200,000,[3] 12-month competitively bid contract to Fotobeam/Brookside for engineering drawing reproduction services. Two months later, on July 28, 1994, while this contract was still in effect, B/PB awarded another contract to the same vendor for the same service for a 12-month period commencing August 1994. The amount of this new contract was $108,000. It is interesting to note that the additional contract was not competitively bid. According to the documents provided to this Office, the additional contract was made "to add items and extend term of blanket to 9/30/95." Both contracts ran concurrently providing the vendor with a total of $441,320, including amendments.

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[3] This contract was amended on March 13, 1995 in order to increase funds by $133,320. This amendment resulted in a total contract value of $333,320.

Moreover, during this same time period additional agreements, offering the same service, were awarded to four other vendors: Moto-Photo, Boris Image Group, Stone Photo, and Charrette. Their combined total contract value between January and March 1995 was approximately $48,000. There was no evidence in the documents provided to this Office that justified these duplicative purchases, which are unnecessary and inefficient.

This Office recommends that the Project develop an efficient, strategic plan to anticipate Project equipment, services, and supplies requirements.

Unfortunately, we were unable to compare per unit pricing that B/PB pays for commodities and services with the price available for similar products under state-wide blanket contracts. The products and services are costed differently. However, B/PB's contract with MassHighway stipulates that B/PB must adhere to applicable state laws and regulations. As such, B/PB must first, according to 802 CMR 2.26(5) make a determination that the items(s) to be purchased are not already available through existing state-wide blanket agreements. And, second if the items are available, then B/PB should include in its cost analyses an evaluation of existing state-wide blanket agreements in order to determine which entity has obtained the most cost effective products or services.

We would like to thank your staff for their cooperation in providing interviews and documents for this review. Please contact me or Diane Jones, project leader for this review, if you or your staff have questions or if we may be of further assistance.

Sincerely,

Wendy Haynes, Deputy Inspector General
Contract Audit and Review

cc: Ron Grenier, Director of Administration and Finance Controls
Marie Hayman, Contract Administration Manager

Massachusetts Highway Department
Central Artery/Tunnel

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APR 1 1 1996

OFFICE OF
INSPECTOR GENERAL

March 29, 1996

Ms. Wendy Haynes
Deputy Inspector General for
 Contract Audit and Review
Office of the Inspector General
One Ashburton Place, Room 1311
Boston, MA 02108

Dear Ms. Haynes:

Thank you for your letter responding to our technical assistance request to evaluate the CA/T Project's: (1) procedures to provide open and fair competition in accordance with state and federal purchasing regulations, and (2) use of blanket agreements for its recurring equipment and supplies requirements.

In general, we agree with your recommendation to use state-wide blanket agreements when they are cost effective and we will do so when practical and when it can be clearly demonstrated that their use is in the best interest of the Project.

We have contacted DPGS to obtain the blanket contract listing from them. We will provide this information to B/PB and direct them to utilize, to the extent possible, state blanket contracts that are proven to be competitive in price, quality, and schedule and do not have a negative impact on our very aggressive DBE program.

In addition, we agree with your recommendation to comply with written project procedures when making purchases.

However, the Project does not agree with the following points in your office's letter.

- Your office's letter states that the Project's award to Oce-Bruning was not justified as a sole source procurement. However, a written sole source justification (see attachment) was part of the purchase order file and the procurement was executed in compliance with Project Procedures. The award made to Oce-Bruning in November, 1992 was in reality a revision to a blanket order that was placed in April of 1992. Although given a new agreement number, wording in the agreement clearly establishes the intent to add funds and new line items to the base agreement.
- It is correct, as your office's letter points out, that

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B/PB awarded two contracts to Fotobeam/Brookside within a two month period. However, these awards were both competitively procured and are significantly different in scope. One agreement is for the traditional reproduction services consisting of color, laser and enlargements of copies, two sided coping, and offset printing of one and two color, as well as black and white documents. The other is for engineering drawing reproduction, including Diazo process and mylars and the collating and binding of these documents into drawing packages.

- Your office's letter states that "...the DPGS awarded A-Copy a state-wide contract to provide the Commonwealth with Oce-Bruning supplies; therefore, CA/T Project contract amendments after January 1994, totaling $225,000, were unnecessary." The Project contacted A-Copy to determine if the agreement could be used to support the Project. A-Copy advised that the State Agreement only provides for supplies for 2000 series equipment and, therefore, cannot be used for supplies needed to support the Project's equipment (series 4000 and 7000 machines).

- The Project's concurrent usage of Moto-Photo, Boris Image Group, Stone Photo, and Charrette for what was believed to be for the same service, was highlighted in your office's letter. Please be advised that Moto-Photo, Boris Image Group and Stone Photo all do provide photo processing. However, the user needs and the final product requirements dictate who will perform the service. The agreement with Moto Photo specifically addresses the needs of our Area, Project, and Resident Engineers, while Boris, who provides back-up to Moto-Photo, is used by our Media Group which requires a higher quality finished product. Stone Photo supplies specialty E-6 processing, enlargements and prints from slides on a rush basis. The Charrette agreement provides an opportunity for low cost goods and services to be supplied by a vendor in one of our construction impacted areas.

  We will review the procurement of this commodity in the future and consolidate purchases if it appears to be in best interest of the Project.

We are reviewing our procedures currently in order to optimize efficiency in the procurement process. We will continue to work with B/PB to ensure the goods and services required to sustain a Project of this magnitude are procured in accordance with the

Project Procedures with fair and open competition.

Thank you for your responsiveness to our request and your helpful recommendations.

Sincerely,

MASSACHUSETTS HIGHWAY DEPARTMENT

Peter M. Zuk
FOR Project Director

attachments

PMZ/ad

cc: R. Grenier
    M. Hayman

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SECTION ELEVEN

Technical Assistance Review of Geotechnical Contract Prequalification Requirements

Assistance Requested:	July 18, 1996 (oral)
Assistance Letter:	July 19, 1996, November 20, 1996
Project Responses:	January 28, 1997

Note: The Project orally requested this Office's assistance in a review of the prequalification requirements for the $17.2 million M026J – Geotechnical Instrumentation Monitoring Contract. This Office responded to the request by letter, dated November 20, 1996. The Project responded by letter, dated January 28, 1997.

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The Commonwealth of Massachusetts

Office of the Inspector General

One Ashburton Place, Boston, MA 02108

ROBERT A. CERASOLI
INSPECTOR GENERAL

JOHN W. McCORMACK
STATE OFFICE BUILDING
ROOM 1311
TEL: 727-9140
FAX: 723-3540

July 19, 1996

William S. Flynn, Deputy Project Director
Central Artery/Tunnel Project
One South Station; Fourth Floor
Boston, Massachusetts 02110

Dear Mr. Flynn:

The purpose of this letter is to follow up on our telephone conversation of July 18 concerning this Office's request for documents pertaining to the selection of a firm to work on the M026J (geotechnical instrumentation monitoring) contract.

You assured me that all documents would be made available to this Office immediately. Shortly following our conversation, your staff faxed a copy of a letter signed by Project Deputy Chief Counsel William Smith and addressed to IG Staff Counsel Helen Flaster indicating that the documents are now available. Thank you for your assistance in expediting this matter.

During our conversation, you also noted that the Project will not advance the selection process or award the contract until it has re-examined the prequalification requirements. Project management wants to ensure that the field of firms eligible to compete for the work was not limited by unnecessarily restrictive threshold criteria. You requested short-turnaround technical assistance from this Office in reviewing this aspect of the prequalification process. We would be happy to assist.

Please request your staff to advise Ms. Flaster of the date by which you wish to receive any specific comments we may have in response to your request for assistance. In the meantime, we will proceed with the review we initiated which will include, but not be limited to, the matter of prequalification threshold criteria.

Sincerely,

Wendy Haynes
Deputy Inspector General for
Contract Audit and Review

cc: Helen A. Flaster, Staff Counsel

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The Commonwealth of Massachusetts
Office of the Inspector General
One Ashburton Place, Boston, MA 02108

ROBERT A. CERASOLI
INSPECTOR GENERAL

JOHN W. MCCORMACK
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November 20, 1996

William S. Flynn, Deputy Project Director
Central Artery/Tunnel Project
One South Station; Fourth Floor
Boston, Massachusetts 02110

Dear Mr. Flynn:

Attached to this letter is our formal written response to your request of July 18, 1996, for technical assistance in connection with M026J, a six year projectwide contract for geotechnical instrumentation monitoring services, valued at $17.2 million. You asked this Office to examine the prequalification process and work closely with Project procurement staff as the process was being revised. We appreciate the opportunity to provide input and assist you in ensuring a level playing field, robust competition, and a fair and rigorous selection process.

During a meeting with this Office on September 11, 1996, you said that the Project had decided to cancel the prequalification phase of the contract. In the Project's view, the prequalification criteria were more stringent than was warranted by the work and thus could have unnecessarily precluded some firms from the opportunity to submit a price proposal. In October 1996, the Project reissued the RFQ/P as a contract addendum and readvertised the contract. According to Project staff, the decision to readvertise was based, in part, on the desire to ensure that anyone who decided not to bid based on the criteria in the first RFQ/P could choose to compete for the work under the new rules.

In this case, we defer to the Project's judgment as to how demanding the prequalification criteria should be. As you will see from the attached commentary, we have focussed our efforts on identifying opportunities to improve the process so that the standards -- whatever the level of qualification the Project has selected -- are clear, announced ahead of time, and provide a sound basis for the selection committee's evaluation.

Because the Project opted to change the rules of the game, this Office concurs with and commends the decision to readvertise. The new process also provides the opportunity to remedy some of the problems we observed.

As you know, we have discussed our concerns with Project staff on several occasions since your initial request. We also provided B/PB procurement staff with informal written comments on the Project's early revision of the request for proposal for these services. We have seen evidence that many of our recommendations have already been incorporated in the revised RFQ/P.

Although we believe a competitive sealed bid process would be a more efficient way to procure the M026J services, we do not object to the two-step approach the Project has decided to use. However, significant adjustments will be needed to avoid the problems we observed in the Project's earlier efforts to procure the services. Because of some of the missteps we noted during our review, which we discuss in detail in the attachment, we urge the Project to re-evaluate *all* proposals from firms that signalled their interest in being considered under the revised rules contained in the readvertised RFQ/P.

We stand ready to provide additional assistance to the Project, including assisting your staff in developing a criteria checklist to assist the Committee in conducting a fair and well-documented selection process. The Project should also develop a written protocol for future procurements, such as M026J, that do not fall neatly into the procurement categories that are already covered in the Project's procedures. We are happy to provide input on any draft procedures the Project may develop.

Please contact me or Helen Flaster, project leader for this review, if you have any questions or if we may be of further assistance to you.

Sincerely,

Wendy Haynes
Deputy Inspector General
for Contract Audit and Review

Attachment

cc: Peter M. Zuk, CA/T Project Director

Commonwealth of Massachusetts
Office of the Inspector General
Response to a Request for Technical Assistance
from MassHighway-Central Artery/Tunnel Project
November 20, 1996

CONTRACT M026J
REVIEW OF PREQUALIFICATION CRITERIA

Background

According to Central Artery/Tunnel Project (Project) staff, geotechnical monitoring work was included in individual construction contracts until about two years ago. In mid-1994 Bechtel/Parsons Brinckerhoff (B/PB), the joint venture that manages the design and construction of the CA/T Project, took over the monitoring work pending implementation of a plan to procure the services under a separate, projectwide contract. In September 1996, Project legal staff said that B/PB continued to do the monitoring work, which at that time entailed reading instrumentation on 17 construction contracts.

On November 29, 1995, the Project advertised M026J, a $17.2 million projectwide contract for geotechnical instrumentation monitoring services. The scope of services included "maintaining, inspecting and calibrating instrumentation readout units, collecting, reducing, processing, plotting and reporting geotechnical instrumentation data." The Project sought an instrumentation firm or joint venture with a core team comprised of a full-time geotechnical instrumentation engineer, a full-time superintendent, and four technicians.

According to Project staff, neither of the Project's two written selection procedures for MassHighway contracts[1] applied to M026J, which is a services contract governed by M.G.L. c.29, §29A, and 801 CMR 21.00. Project staff also said that the Committee did not develop its own detailed written selection procedure but did rely on Project Procedure 701, Architect Engineer Selection and Contract Award, for guidance.

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[1] Project Procedure No. 701, Architect Engineer Selection and Contract Award, and Project Procedure No. 704, Construction Contract Formation, Bidding, Award Process.

According to documents provided to this Office by the Project, the Commissioner of the Massachusetts Highway Department appointed a CA/T prequalification committee, although the contract was not subject to the prequalification requirements of state law or regulation, or CA/T Project Procedure. The Project then devised a two-phase selection procedure: Proposers that met all of the Project's prequalification criteria would be invited to submit a fee proposal; the contract would be awarded to the proposer offering the lowest price.

Three Project employees from MassHighway comprised the prequalification committee for M026J (the Committee). In addition, three B/PB employees served as advisors to the Committee. According to Project staff, the Committee decided during a meeting on February 9, 1996, to request reformatted resumes from all 14 proposers and to request additional financial information from certain firms. On March 1, 1996, the Committee met a second time and rated the proposers. According to the minutes of that meeting, the Committee disqualified six of the 14 firms. On April 16, 1996, the Committee met again and finalized the results of the second meeting. The Project did not notify any of the proposers of the Committee's conclusions. Instead, the Project decided to halt the procurement until it had re-examined the prequalification requirements for the contract.

By letter of July 19, 1996, this Office confirmed the Deputy Project Director's request for technical assistance in reviewing the prequalification process. During a meeting on September 11, 1996, Project staff told us that the Project planned to cancel the prequalification phase of the M026J procurement and reissue the RFQ/P as a contract addendum. Project staff said that the prequalification criteria in the new RFQ/P would be less stringent and more suitable to the Project's needs. According to Project staff, the decision to readvertise was based, in part, on the desire to ensure that anyone who decided not to bid based on the criteria in the first RFQ/P could choose to compete for work under the new rules. In October 1996, the Project reissued the RFQ/P as a contract addendum and readvertised the contract for $16.25 million. By addendum number 17, the November 5 due date for proposals was extended to December 10, 1996.

OBSERVATIONS AND RECOMMENDATIONS

Engineering staff from this Office reviewed the RFQ/P and each of the 15 addenda issued by the Project between December 29, 1995 and September 16, 1996. This analysis included a thorough review of evaluation criteria found throughout the RFQ/P. In addition, staff from this Office independently reviewed and evaluated each of the 14 proposals submitted by firms in response to the initial solicitation. The following observations and recommendations are based on our review of the RFQ/P and the process by which the Project initially evaluated the first round of proposals. Many of these recommendations have already been incorporated in the Project's second RFQ/P.

1. The Project should define clearly the criteria that the Committee will use to evaluate the prequalification proposals, advise the Committee and the proposers of the rules ahead of time, and take appropriate steps when rule changes could affect which firms choose to compete for the work.

The criteria listed in the RFQ/P were too vague to be consistently applied to all proposals. While the Project's procedures do not provide a template for procuring the M026J services, they do provide guidance for a sound procurement process. For example, Project Procedure 701, which governs designer selection, provides in part that the consultant evaluation committee:

> [R]eviews draft RFQ-P and provides the qualifications and criteria to be used to evaluate each firm's qualifications to perform the work described. The qualifications and criteria shall be predetermined and established in writing by the [Committee] with assistance from B/PB. Criteria should be clearly stated, tailored to the specific needs of the project and relevant to a fair Contract.

The first process did not comply with these guidelines in several significant respects. Specifically, we found the following problems with the first RFQ/P:

a. The Project's selection criteria for technicians allowed the substitution of education for work experience but did not state how much education could be substituted for how much experience. The absence of an objective standard increases the risk that proposers will be evaluated inconsistently. Clear criteria provide a sound basis for later justifying the Project's choice of one firm over another or the decision to disqualify firms from the competition.

b. The RFQ/P did not specify that the same individuals whose resumes were submitted to the Project must be assigned to the Project. By failing to state this requirement, the Project ran the risk of a "bait and switch" tactic where a proposer submits resumes of its most qualified candidates but later assigns less qualified staff to the Project. The qualifications section of the RFQ/P should state that key personnel must be assigned to the contract.

c. Pertinent information about the prequalification criteria, some of which was repetitive, appeared throughout the RFQ/P. While redundancies are acceptable, a checklist based on a consolidated list of all criteria will alert proposers to the rules of the game and provide the Committee with an efficient, clear method for determining whether the pre-stated standards have been met by the proposers.

d. In one case, the Committee required proposers to resubmit in a format prescribed by the Project, resumes of geotechnical engineers, superintendents, and technicians. According to one evaluator's written comments, the new format did not improve the resumes. For future contracts, the Project should consider developing a detailed resume form that will permit it to make a fair comparison of applicants.

e. The Project made changes to the RFQ/P that could have affected which firms chose to compete for the work. The changes were made in the Project's answers to proposers that were part of an addendum issued on December 29, 1995, shortly before prequalification proposals were due on January 10, 1996.

> i. MassHighway reduced the Professional Liability insurance coverage on M026J from $10 million to $1 million. According to Project legal staff, B/PB recommended this change based on an analysis of the level of the Commonwealth's liability exposure in this area.
>
> ii. MassHighway changed the requirement that mandated the submission of audited balance sheets and income statements by allowing firms that did not have that information to submit instead reviewed financial statements or other financial reports prepared by a certified public accountant.

In the future, the Project should place a premium on determining its needs in advance of issuing the RFQ/P and ensure that the rules of the game are clearly laid out for all potential proposers (and the selection committee) to see.

2. Evaluate firms based solely on the written proposals and the information explicitly required.

The B/PB evaluators improperly used personal knowledge in addition to the information provided in the proposals. One evaluator wrote that a candidate for geotechnical instrumentation engineer (GIE) had no direct proof of four years of instrumentation experience because the dates were missing from his resume. That evaluator concluded: "However, he was approved by us as GIE on a previous CA/T Project, so he has to be acceptable."

The evaluators did not limit their assessment of the proposers' qualifications to the materials provided. In evaluating a proposer's expertise with computer database and plotting programs, an evaluator wrote: "Skimpy data plot example -- acceptable only by personal knowledge." Another firm was not so fortunate: "Data plotting capabilities are iffy because so little of our kind of data." Moreover, the evaluators were inappropriately influenced by each other. The handwritten comments of one evaluator indicate that he passed resumes that he characterized as skimpy, short, and hard to interpret based on the other evaluator's personal knowledge of the candidates.

3. MassHighway -- not B/PB -- should take the lead in reviewing and evaluating the proposals; B/PB's role should be restricted to that of advisor.

According to Project staff, the Committee members used voice votes to pass or fail each of the proposals. The Committee's written records consisted of minutes of meetings and spreadsheets showing whether proposals passed or failed. Although two of three advisors from B/PB provided written evaluations of the resumes that were submitted with the proposals, the documents we reviewed provided no information about how individual Committee members voted. It appears that B/PB advisors, not MassHighway Committee members, performed the substantive review and analysis of the competing firms.

B/PB staff should not play a dominant role in making decisions for which MassHighway is ultimately responsible. Future Committees should follow more closely Procedure 701 by keeping written records of their proceedings relative to establishing a firm's qualifications (§3.4.16) and filing individual ranking sheets as well as records of the proceedings of the evaluation committee in the Project's procurement file as permanent records of the evaluation (§3.4.19).

4. Obtain information necessary to assess proposers' qualifications; consider tapping other resources within MassHighway, including the internal audit group, to assist in crafting the RFQ/P and reviewing proposers' financial information.

While the RFQ/P mandated that the proposers demonstrate "financial stability," the Committee did not systematically evaluate whether the financial information it received from proposers met that criterion. We found no clear definition of the standards for determining whether a firm was financially stable.

A member of B/BP's accounting department reviewed the financial data submitted as part of the proposals. His report suggests that he could not accurately assess five of the 14 proposals because the proposer had submitted insufficient data. According to Project staff, the Committee intended to request additional financial information from certain firms but never did. Nonetheless, the Committee determined that all of the proposers met the criterion for demonstrated financial stability. Our review of Project documents disclosed no explanation of the basis for this conclusion.

The Project should decide in advance what it needs in terms of financial information and how that information will be used. In assessing standards for financial stability, the Project may want to ask for input from MassHighway's internal audit department.

5. Evaluate all proposals during the second round against the revised prequalification criteria.

According to Project staff members they will not require firms that have previously submitted prequalification proposals to resubmit their proposal in response to the revised prequalification criteria. Project staff members told us that they, therefore, will not review prequalification proposals from firms or joint ventures which had already been prequalified during the first round.

It is critical that the Committee take a fresh look at all proposals, whether or not the same proposal was submitted during the first round. While some firms were properly disqualified during the first round, some were improperly qualified (see point no. 2b, above). It is essential that the Project systematically reevaluate all proposals during the second round. In reevaluating all proposals we encourage you to make use of the checklist that you developed in response to our recommendation. We would be happy to provide input into making the checklist more useful to you.

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Massachusetts Highway Department
Central Artery/Tunnel

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JAN 3[illegible] 1997

OFFICE OF
INSPECTOR GENERAL

January 28, 1997

Office of Inspector General
One Ashburton Place Room 1311
John W. McCormack Building
Boston, MA 02108

Attn. Ms. Wendy Haynes, Deputy Inspector General
for Contract Audit and Review

Dear Ms. Haynes:

This is written in acknowledgement of your letter dated November 20, 1996 transmitting your report entitled: Contract MO26J - Review of Prequalification Criteria.

The report, written in response to our request for technical assistance, has been shared with Project procurement personnel in order that the recommendations can be applied to other Project procurements, as appropriate.

As you note in your letter, many of your informal written comments of the Project's early revision of the request for proposal were incorporated into the revised RFQ/P. This reinforces our general belief that your Office's early involvement in the review of select activities yields the maximum benefit.

On behalf of the Project, thank you and your staff for their active and positive participation in responding so constructively to our request for technical assistance.

Sincerely,

MASSACHUSETTS HIGHWAY DEPARTMENT
Marie V. Hayman
Marie V. Hayman
Manager of Contracts

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SECTION TWELVE

Technical Assistance Review of the Field Engineering Inspection Handbook

Assistance Requested:	July 31, 1996[3]
Assistance Letter:	May 29, 1997
Project Responses:	December 30, 1997

Notes: The Project requested that this Office provide assistance by reviewing the Field Engineering Inspection Handbook and suggesting improvements to the handbook. This Office responded to the request by letter, dated May 29, 1997. The Project responded by letter, dated December 30, 1997.

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[3] The Project also requested, but later withdrew, a request for this Office to perform a cost-benefit analysis of the reprographics department.

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Massachusetts Highway Department
Central Artery/Tunnel

RECEIVED
AUG 02 1996
OFFICE OF
INSPECTOR GENERAL

July 31, 1996

Wendy Haynes
Deputy Inspector General
Contract Audit and Review
One Ashburton Place, Room 1311
Boston, MA 02108

Dear Ms. Haynes:

I am writing to request technical assistance in a number of areas for fiscal year 1997 under the terms of the Interdepartmental Service Agreement (ISA) the Department has with your Office.

The Project requests your Office's review of the following items, several of which your Office briefly reviewed in its Construction Field Operations Technical Assistance Report dated May 15, 1996. A brief explanation of the scope of the technical assistance is also provided following each item.

- **RE Files.** Review REs filing system to determine if it is adequate to the needs of the Project.
- **Field Engineer's Handbook.** Review handbook and suggest improvements. Recommend additional tools/resources for field engineer usage.
- **Bidder Attraction Program.** Review the Project's outreach efforts aimed at increasing construction firm participation in contract bidding. Suggest other mechanisms to increase the pool of eligible bidders for CA/T Project contracts.
- **Reprographics Department.** Perform cost benefit analysis comparing document reproduction at the Project's Reprographics Department with contracting out for the service.
- **ATO Blanket Contract Utilization.** Analyze the extent to which B/PB's ATO Department has utilized State blanket contracts for computer and related purchases. Recommend mechanisms for improvement, if warranted.

Further explanation of each of these areas can be obtained

One South Station • Boston • Massachusetts • 02110 • Phone 617-951-6000 • Fax 617-951-0897

from either Ron Grenier at 342-4585 or Marie Hayman at 342-1344. Thank you for your assistance.

Sincerely,

MASSACHUSETTS HIGHWAY DEPARTMENT

Peter M. Zuk
Project Director

AD 2.4.2
096-2274

The Commonwealth of Massachusetts
Office of the Inspector General
One Ashburton Place, Boston, MA 02108

ROBERT A. CERASOLI
INSPECTOR GENERAL

JOHN W. McCORMACK
STATE OFFICE BUILDING
ROOM 1311
TEL. 727-9140
FAX 723-3540

May 29, 1997

Peter M. Zuk, Director
Central Artery/Tunnel Project
One South Station, Fourth Floor
Boston, Massachusetts 02110

Dear Mr. Zuk:

By letter dated July 31, 1996, you asked this Office to provide the Central Artery/Tunnel (CA/T) Project with technical assistance in a number of areas, including the *Field Engineering Inspection Handbook (FEIH)*. MassHighway requested that this Office review the FEIH and suggest improvements. With this letter, I am transmitting a written summary of the results of our review, which we hope will contribute to MassHighway's cost containment and quality assurance efforts on the CA/T Project.

According to Project procedures, the purpose of the FEIH is to provide field engineering staff with uniform guidelines for "judging acceptability of construction." We compared the FEIH to handbooks from other public agencies and found the technical content to be consistent. We conclude from our review that the existing FEIH provides an adequate reference tool for the experienced Field Engineer (FE). For the inexperienced FE, however, we believe that the technical information is too general. The FEIH does not provide enough information for an inexperienced FE to inspect for a specific construction task.

In the enclosed report, we suggest a number of changes that could enhance the FEIH. These changes would make the FEIH more user friendly, add details referencing Project procedures, and provide guidelines for professional conduct. We also recommend that the FEIH be administered in accordance with Project Procedure 101, which outlines standard practices for updating and distributing Project policies. The Project should also use staff surveys in an on-going program to evaluate the efficacy of the FEIH and other Project documents.

The FEIH is an important element -- but by no means the only element -- of a successful effort to ensure a high quality field team. The FEIH should be used in conjunction with a formal training program, on-the-job training, and periodic FE performance reviews.

We would like to thank members of your staff, especially Marie Hayman, for their cooperation in providing documents and interviews. Please contact me or Chief Neil Cohen, if you or your staff have questions or if we may be of further assistance.

Sincerely,

Wendy Haynes,
Deputy Inspector General
for Contract Audit and Review

Attachment

cc: William Flynn, Deputy Project Director

Central Artery/Tunnel Project - Technical Assistance Request

Field Engineers Inspection Handbook

Project Leader for this Review: Robert Kimball, P.E.

INTRODUCTION

In response to the Project's request for an assessment of the *Field Engineering Inspection Handbook (FEIH)*, we reviewed the current handbook, dated December 1995. We also requested the equivalent handbook or written guidelines from other public agencies that handle major construction projects. We reviewed notes of interviews previously conducted with field engineers assigned to six different CA/T Project construction contracts and extracted data relevant to this review. In addition, we discussed the purpose and development of the FEIH with Project management staff and examined records in the field as appropriate for purposes of this review.

ISSUE 1

B/PB did not develop an adequate scope and action plan to survey the field engineers (FEs).

This Office's May 14, 1996 Construction Management - Phase II Technical Assistance letter stated:

> All of the field engineers interviewed by this Office stated that the *Field Engineering Inspection Handbook* that B/PB provides to all field engineers is too general, not very useful, and too bulky to carry into the field. As a result, the field engineers do not use it often.

The Project responded to our May 14, 1996 technical assistance letter by letter dated October 7, 1996. The Project stated:

> Field engineers will be surveyed to assess the practical value of the handbook and gather ideas for enhancing its usefulness.

B/PB conducted a survey without a defined scope or survey plan and without a written record of the results. B/PB's Construction Support Manager conducted the survey by requesting that the field construction managers and supervisors conduct the survey orally. B/PB did not prepare a standard reporting format. As a result, the managers reported the survey results by handwritten note, electronic mail, or (most frequently) by telephone. B/PB did not tabulate the survey results or provide a written survey summary to MassHighway.

A meaningful survey should be planned, structured and conducted objectively. In this case, a confidential written reply from the FEs should have been considered. Without written tabulated survey results there is no assurance that the survey fully elicited and impartially reflected the views of construction field staff.

Recommendation:

Since B/PB did not conduct an adequate survey of the FEs, we recommend that MassHighway require B/PB to redo the survey, at no cost to or loss of job hours to the Project. Alternatively, MassHighway could take this opportunity to direct B/PB to survey the FEs about a wider variety of issues including the Project's training program and field procedures. MassHighway should review and approve the survey plan before it is implemented. We would be happy to provide MassHighway with additional input at the draft review stage.

ISSUE 2

The FEIH could be better designed for easy use in the field.

In an interview, B/PB's Construction Support Manager stated that the FEs offered only two criticisms of the FEIH: (1) It was difficult to find specific sections quickly because the sections were not clearly marked along the external edge of the book; and (2) it was too bulky to take into the field.

The FEs suggested that the FEIH have an external index (tabs) so they could find sections more easily. The Project determined it would not be cost effective to reprint the FEIH with indented tabs and apparently did not respond at all to the complaint about its bulkiness.

FEs we interviewed stated that they tend not to carry the FEIH into the field because it is so bulky. We were told that B/PB designed the four inch by seven inch FEIH to fit easily into an FE's pocket. The FEIH, however, is one and three-quarter inches thick. This thickness makes it a bulky object to carry, especially when the FE must carry other items such as tape measures and flashlights.

Frequently, the FE will need to refer to one or two sections of the FEIH in the field on any given day. If time permits and the equipment is available, the FE may make a copy of the required sections and take the copy into the field, rather than carrying the unwieldy FEIH. The size and screw binding of the FEIH, however, make it difficult to add revised sections or to photocopy specific sections. On occasion, the FE will simply remove a section from the FEIH and take only the needed material to the field. Unfortunately, the section could be misplaced or not replaced at all, leaving an incomplete FEIH for future use.

Recommendation:

We recommend that the FEIH be kept in an eight and one half inch by 11 inch loose leaf format. The loose leaf binder would simplify the process of replacing updated sheets and copying relevant sections for the field engineer to carry into the field for the day's work. The field engineer need not take the entire manual into the field. We also suggest that the section divider sheets be printed on bright colored sheets, thereby helping the FEs find the section that they are looking for without incurring the expense of indented tabs.

ISSUE 3

B/PB does not comply with Project procedures when it updates and distributes the FEIH.

Project Procedure 101 describes the process for revising, updating and distributing *all* written policies and procedures, including a requirement for maintaining a log of who holds a copy of the various procedures and who has received which revision(s). Project Procedure 1204 deals specifically with the FEIH and briefly describes the purpose of the FEIH and policy concerning its distribution. This procedure charges the resident engineer with responsibility for ensuring that all FEs have a copy of the FEIH and states that "[i]ncorporation of revisions will be the responsibility of the Project Quality Assurance Manager."

Our review disclosed no evidence of a log of those who have a copy of the FEIH, nor any other formal control of the distribution of the FEIH or its revisions. Although a spot-check of handbooks at several construction sites showed that the field staff did possess the most recent version of the FEIH, the apparent absence of central control could cause problems for the Project as the number of field staff increases during this next surge of construction activity.

The FE -- and the resident engineer in charge -- have no easy method for determining whether they are using the latest version of the FEIH. Instead, they must review each FEIH section against a master FEIH. Moreover, each major section of the FEIH has a table of contents, but no table of contents or index exists for the entire FEIH. The FEIH does not contain an index with revision numbers or dates for all sections.

Recommendation:

MassHighway should direct B/PB to update and distribute the FEIH consistent with the requirements of Project Procedure 101. Without this level of control, the Project has no assurance that the FEs consistently use updated criteria when inspecting construction work. The index should list each section with the revision number of the section. The index should also be dated and have the revision number of the FEIH. The FEIH revision number should also be listed on the controlled Project procedures index. B/PB's Quality Assurance Group should send an advisory to the REs when revisions are made so the REs can notify the field staff. There should be a controlled distribution of all revisions to ensure every FE gets the updated sections.

ISSUE 4

The FEIH does not provide sufficient information on Project standards for documentation and expectations for FE conduct.

The FEIH provides the FE with the fundamental construction attributes that are reviewed during inspection. According to Project staff, most Project FEs are experienced. We would reasonably expect that much of the technical information contained in the FEIH would be common knowledge -- or at least familiar -- to these FEs. Nevertheless, the information serves as a good reminder and reference source for the FE.

The FEIH does not specify what the CA/T Project requires for inspection documentation. For example, the FEIH should make reference to the field engineer's daily report, deficiency reports, change notices, and time and materials documentation. It should include a general description of these requirements and reference the applicable Project procedures.

At one time, the Project issued a desk reference manual to FEs that outlined important procedures and standards, including certain documentation requirements. According to Project staff, the Project discontinued this manual in 1995, merged its contents with the Resident Engineer's Manual and then replaced both with the FEIH. To our knowledge, no other document has replaced this resource. In our view, the Project's decision to discontinue the FE manual was ill-advised and imprudent. The FEIH does not meet the needs of the diverse audience it is expected to guide.

Other agencies that deal with public construction include standards of conduct in their handbooks, but the Project does not. Every FE should already know what is required, but it is important to have written references and reminders. The following are partial excerpts from the Division of Capital Planning and Operation's (DCPO) *Instruction Manual for Resident Engineers* and the Massachusetts Bay Transportation Authority's (MBTA) *Resident Engineer's Manual*:

a. Avoid Conflict of Interest - Never put yourself in a situation were it appears that you are accepting a favor from a Contractor.

b. Be as quick to praise good work as to criticize inadequate work. At all times be candid, but diplomatic, about the Contractor's performance.

c. Keep adequate records. Do not depend on personal memory or verbal commitments, put things in writing. Err on the side of recording too much information than not enough.

d. Be one step ahead. Plan a month ahead, a week ahead, and a day ahead.

e. Know every part of the specifications and drawings.

f. If safety and environmental requirements are not met, the job is a failure, even if it is completed on time and under budget.

g. Ask for assistance immediately when you need it.

h. Do not authorize deviations from the Contract Documents.

i. Do not advise on, or issue direction relative to, any aspect of building technique or sequence, unless a specific technique or sequence is detailed in the specifications.

j. Do not order a work stoppage on your own authority except in an emergency situation.

Recommendation:

Guidelines similar to those listed above should be included in the FEIH. Other subject areas that are not in a specific Project procedure but are general practices of the Project should be addressed in the FEIH, including the level of detail required in daily inspection reports and other documentation standards. Topics should include the quality of records, and procedures for taking and cataloguing photographs. The Project might also consider reissuing the FE manual in order to supplement the FEIH or incorporate the FEIH into a new 8 1/2 x 11 FE manual. We understand that adding additional sections to the FEIH will not solve the problem of its awkward size and reportedly infrequent usage. Nevertheless, we believe the FEs should have this information available to them and be held accountable for following explicit standards of documentation and conduct.

Massachusetts Highway Department
Central Artery/Tunnel

RECEIVED

JAN [illegible]

OFFICE OF
INSPECTOR GENERAL

December 30, 1997

Office of Inspector General
One Ashburton Place
John W. McCormack Building
Boston, MA 02108

Attn. Ms. Wendy Haynes, Deputy Inspector General
for Contract Audit and Review

Dear Ms. Haynes:

This is written in acknowledgment of your letter dated May 29, 1997 transmitting your report entitled: Field Engineers Inspection Handbook. We apologize that our formal acknowledgment comes several months after it's receipt and internal review.

The report, written in response to our request for technical assistance has been shared with Project personnel responsible for the issuance and periodic revision of the Field Engineers Handbook. This was done in order to maximize the awareness of this report and its recommendations and to make others aware of your important role in assisting the Project.

If you should have any questions, or require additional information regarding these matters, please contact me at 951-6105.

Sincerely,

MASSACHUSETTS HIGHWAY DEPARTMENT

William J. Smith
Senior Counsel

AD-2.4.2
O97-3042

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SECTION THIRTEEN

Technical Assistance Review of Automated Technology Office (ATO) Procurement Practices

Assistance Requested:	July 31, 1996
Assistance Letter:	December 22, 1997
Project Responses:	January 16, 1998

Notes: The Project requested that this Office provide assistance by reviewing the procurement practices of the Automated Technology Office and suggesting improvements to the procurement process for computer hardware, software, and related items. This Office responded to the request by letter, dated December 22, 1997. The Project responded by letter, dated January 16, 1998.

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Massachusetts Highway Department
Central Artery/Tunnel

RECEIVED
AUG 02 1996
OFFICE OF
INSPECTOR GENERAL

July 31, 1996

Wendy Haynes
Deputy Inspector General
Contract Audit and Review
One Ashburton Place, Room 1311
Boston, MA 02108

Dear Ms. Haynes:

I am writing to request technical assistance in a number of areas for fiscal year 1997 under the terms of the Interdepartmental Service Agreement (ISA) the Department has with your Office.

The Project requests your Office's review of the following items, several of which your Office briefly reviewed in its Construction Field Operations Technical Assistance Report dated May 15, 1996. A brief explanation of the scope of the technical assistance is also provided following each item.

- **RE Files.** Review REs filing system to determine if it is adequate to the needs of the Project.

- **Field Engineer's Handbook.** Review handbook and suggest improvements. Recommend additional tools/resources for field engineer usage.

- **Bidder Attraction Program.** Review the Project's outreach efforts aimed at increasing construction firm participation in contract bidding. Suggest other mechanisms to increase the pool of eligible bidders for CA/T Project contracts.

- **Reprographics Department.** Perform cost benefit analysis comparing document reproduction at the Project's Reprographics Department with contracting out for the service.

- **ATO Blanket Contract Utilization.** Analyze the extent to which B/PB's ATO Department has utilized State blanket contracts for computer and related purchases. Recommend mechanisms for improvement, if warranted.

Further explanation of each of these areas can be obtained

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from either Ron Grenier at 342-4585 or Marie Hayman at 342-1344. Thank you for your assistance.

Sincerely,

MASSACHUSETTS HIGHWAY DEPARTMENT

Peter M. Zuk
Project Director

AD 2.4.2
096-2274

The Commonwealth of Massachusetts
Office of the Inspector General

ROBERT A. CERASOLI
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P. O. BOX 270
BOSTON, MA 02133

December 22, 1997

Peter M. Zuk, Director
Central Artery/Tunnel Project
One South Station, Fourth Floor
Boston, Massachusetts 02110

Dear Mr. Zuk:

The purpose of this letter is to provide you with the results of this Office's review in response to MassHighway's July 31, 1996 request for technical assistance[1] on the procurement practices of the Central/Artery Project's Automated Technology Office (ATO). Specifically, the Project asked this Office to analyze the extent to which Bechtel/Parsons Brinckerhoff (B/PB) uses state blanket contracts[2] for computer hardware and software, and related purchases.

For this review, we examined 143 purchase orders totaling approximately $2.1 million for the period March 1996 through March 1997.[3] Our examination also included a review of ATO's direct expense budget, forecast and actual expenditure for contract number 96159 (work program 14), to determine if ATO was spending within its budget.

During our review, we considered 801 CMR 21.00,[4] the state regulation that governs the procurement of services and commodities. The Executive Office of Administration and Finance adopted the regulations under the authority of M.G.L. c.7, §22. Policies and procedures concerning 801 CMR 21.00 are construed in the Commonwealth's *Procurement Policies and Procedures Manual.* 801 CMR 21.01 (1) provides in part that the purpose of the regulations is to provide all Departments with uniform rules and standards governing the procurement of commodities or services.

In an interview with this Office, B/PB purchasing staff described the procurement process. Staff stated that for purchases of $50,000 and under, B/PB buyers solicit price quotes from vendors on the list of certified Disadvantaged Business Enterprises (DBE) compiled by the State Office of Minority and Women Business Assistance (SOMWBA).

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[1] The Project initially assigned a low priority to this technical assistance request. In April 1997, Deputy Counsel Greiman asked this Office to proceed with the request.

[2] "State blanket contracts" is the term commonly used for what are now referred to in the state regulations as "statewide contracts" (801 CMR 21.02). Statewide contracts are contracts procured on behalf of all departments for specified commodities and services.

[3] Project documents show that a total of 164 purchase orders were issued during this time period. We examined only those purchase orders with a monetary value assigned by the Project that was greater than zero.

[4] The regulations for procuring services and commodities were combined in 801 CMR 21.00, effective April 19, 1996. The procurement regulations for services (801 CMR 20.00) and for commodities (802 CMR 2.00) were repealed on June 28, 1996.

B/PB's buyers said they know which vendors on the list can supply certain types of products for the best price. Buyers solicit quotes from those vendors on the list that can provide the material or service that is requested by a Project employee.

B/PB's buyers advised us that they follow the procurement guidelines laid out in Project Procedure 602 ("Field Material Requisition and Purchase Order Process"). Section 3.12 of the procedure states in part that if the estimated value of the materials or services is $2,500 or less, the buyer must obtain price quotes orally from one or more vendors. If the estimated value is between $2,501 and $10,000, three bids with confirming written price quotes are required. If the estimated value is between $10,001 and $50,000, then the buyer must formally request bids from at least three vendors. Purchases of $50,001 and over require that the request for bids be advertised.

The Project's thresholds for determining bidding requirements are markedly different from those established in 801 CMR 21.00. Under 801 CMR 21.05, a competitive procurement is not required for purchases of commodities or services or both, that cost less than $1,000. Procurements with a total contract value of less than $50,000 require a Request for Responses (RFR) that must be distributed to at least three qualified bidders, and may also be published in the *Goods and Services Bulletin*, newspapers, and/or posted on the Internet based Commonwealth Procurement Access and Solicitation System (Comm-PASS). The RFRs for all solicitations greater than or equal to $50,000 must be posted on Comm-PASS, and may also be published in the *Goods and Services Bulletin* and/or newspapers.

In only three out of the 143 cases we reviewed, the Project received price quotes from state blanket vendors when it solicited vendors to supply various hardware and software products. According to B/PB staff, state blanket vendors were not always given an opportunity to bid because first preference is given to DBE firms. B/PB's purchasing staff also stated that if given a choice between procuring from a DBE firm and a non-DBE state blanket vendor, they will procure from the DBE supplier in order to meet the Project's DBE goals as required by the federal government. Project Procedure 602, section 1.3.2 states that "[i]t is the policy of B/PB to ensure that every effort is made to using [*sic*] Disadvantaged Business Enterprises (DBE) as defined in Federal Regulation 49 CFR, Part 23."

Staff noted that they will review 801 CMR 21.00 to determine if some elements can be incorporated in the Project's procurement procedures, which are currently being rewritten. However, B/PB's first priority is to ensure compliance with federal regulations regarding its DBE goals. The Project's DBE goal for work program 14 is 11 percent participation. Non-compliance could jeopardize federal funding for the Project. B/PB staff said that they rely on the commodities and services contracts – as well as construction contracts – for achieving the Project's DBE participation goals.

In two of the three cases the state blanket vendors' quotes were higher than non-state blanket vendors. For instance, in March 1997 the Project solicited price quotes from vendors that could provide a Hewlett Packard NetServer system including peripheral equipment. The Project received responses from three vendors for the same HP NetServer configuration. The state blanket vendor, Retro-Fit Incorporated, was about $3,500 higher than the lowest bidder, Terminal Exchange Systems. The Project did not procure through the state blanket vendor for this particular purchase. The Project procured with the lowest bidder, Terminal Exchange, a DBE/Minority vendor.

However, on another occasion the Project procured 150 Pentium upgrades from Retro-Fit. In this case, Retro-Fit's quote per unit was about $168 less than the next highest bidder, The Praxis Group, Inc., another state blanket vendor.

In another instance a state blanket vendor (Compucom Systems, Inc.) misquoted to B/PB the unit prices of Microsoft Office products. According to documents provided by B/PB to this Office, the Executive Office of Health and Human Services (HHS) has a more favorable price agreement directly with Microsoft than the Commonwealth has with its state blanket vendors for Microsoft products.

The HHS price agreement did not extend to other state agencies. The level of pricing that Compucom quoted to B/PB procurement staff was incorrectly based on the HHS price agreement, which was $9,232 lower than the pricing available to the Project through the state blanket vendor:

Microsoft Product	Price Agreement for HHS			Price Quote for State Blanket		
	Quantity	× Price/Unit	= Extension	Quantity	× Price/Unit	= Extension
Microsoft Office 97	150	$192.89	$28,933.50	150	$251.19	$37,678.50
Microsoft Office Pro	25	282.29	7,057.25	25	301.77	7,544.25
Total			$35,990.75			$45,222.75
Difference $9,232.00						

Source: OIG analysis of data obtained from B/PB documents.

It is unclear to this Office why HHS was able to obtain from Microsoft a more favorable price agreement than the state purchasing agent.

In this instance, B/PB did not solicit price quotes from other suppliers. In the view of B/PB staff we interviewed, multiple price quotes should not be necessary – nor should advertising if the job exceeds the $50,000 threshold – if the commodity or service can be purchased from vendors under state blanket contracts. B/PB staff reasoned that in instances where state blanket contracts exist and there are no DBE vendors available, the state has already done the work and it would be inefficient to advertise or obtain multiple quotes. The B/PB buyer, therefore, placed the order through the state blanket vendor, Compucom.

Over the course of two years, B/PB more than tripled its original $100,000 contract with Mahon Cable without benefit of additional competition. The Project awarded a contract to the low bidder, Mahon Cable Company, Inc., in January 1994 for $100,000. The company was to provide the Project's offices with Local Area Network (LAN) cable installation, maintenance, and troubleshooting.

The term of performance for this contract was 21 months beginning on January 10, 1994 through September 30, 1995. From May 1995 to the present, B/PB issued 12 revisions that increased both the maximum dollar amount and duration of the initial purchase order, B04530. The schedule below shows that of the $316,200 awarded to Mahon Cable, $216,200 was spent without benefit of open and fair competition.

Purchase Order	Amount		Dates of Service/Revision
Original P.O. B04530	$100,000		1/10/94 – 9/30/95
Revision # 1	50,000	$124,200 No Bid Contract Work	5/10/95
Revision # 2	12,000		7/13/95
Revision # 3	10,000		10/11/95 – 12/31/95
Revision # 4	8,000		1/11/96 – 2/29/96
Revision # 5	4,000		3/1/96 – 4/30/96
Revision # 6	19,600		4/17/96 – 6/30/96
Revision # 7	0		
Revision # 8	20,600		7/26/96 – 12/31/96
Total	$224,200		
P.O.14-470-00052-AC	$ 17,000	$92,000 No Bid Contract Work	12/11/96 – 3/31/97 new P.O. no.
Revision # 1	20,000		3/04/97 – 4/30/97
Revision # 2	30,000		4/10/97 – 6/30/97
Revision # 3	0		Labor rate changes
Revision # 4	25,000		7/08/97 – 12/31/97
Total	$ 92,000		
Grand Total	$316,200	$216,200	

Source: OIG analysis, data from B/PB documents.

B/PB purchasing staff stated that B/PB had originally advertised the work and 18 firms obtained a copy of the bid package, although only two firms bid on the job. According to B/PB staff we interviewed, because Mahon Cable was then and now remains a state blanket contract vendor, they did not necessarily feel obliged to readvertise the procurement or obtain multiple quotes because that work had already been done by the state.

Nonetheless, February 1997 e-mail among B/PB purchasing staff and ATO staff suggests that this contract should be "rebid or sole sourced." There was no written evidence justifying the sole source purchase of additional LAN equipment and maintenance service in the documents provided to this Office. Subsequent amendments to the initial contract should have been bid. Without benefit of competitive bids on more than $200,000 in additional work, the Project may have spent more than was necessary for this service.

In this Office's January 30, 1996 letter to the CA/T Project regarding its procurement practices, this Office criticized a similar deficiency. Specifically, our letter stated that in November 1992 B/PB awarded a $25,000 contract to a vendor for office and engineering supplies without benefit of competitive bids. By April 1995 the original contract had been amended eight times, increasing the total contract amount to $440,000.

This Office reiterates the previous recommendation: the Project should follow state laws and regulations for its procurement activities; failure to do so may result in unnecessarily costly purchases and could jeopardize federal reimbursements.

In an interview with this Office, B/PB staff stated that several B/PB blanket agreements for supplies and services are ending. As these contracts come up for renewal several, including the agreement with Mahon Cable, will be re-examined and re-procured competitively or awarded on a sole source basis with a written justification.

According to B/PB purchasing staff the Project is in the process of rewriting its purchasing procedures. This Office encourages the Project to review 801 CMR 21.00, and to incorporate its bidding requirements for the Project's purchasing activities.

ATO's direct expense budget is about 14 percent of the work program's budget, yet it is spending at a 15 percent rate. At the Project's request, we reviewed ATO's direct expense budget, forecast, and actual expenditure for work program 14. Our findings indicate that actual expenditure plus commitments, $4.63 million, through June 30, 1997 were approximately 2.0 percent over budget,[5] $4.54 million, and 1.6 percent over forecast,[6] $4.56 million.

In the larger context of the $11.4 billion price tag for the CA/T Project,[7] ATO's $90,000 unfavorable variance against budget might not be cause for great concern. However, the variance is significant when compared to B/PB's direct expense budget and expenditure for work program 14 during the same period. For the period June 1996 through June 1997, actual direct expenses were about $30.7 million for work program 14, which was approximately 4.6 percent under the budgeted figure of $32.2 million.[8] Unabated, even a 1.0 basis point increase in ATO's direct expense spending would mean that by the end of work program 14, direct expenses would be $1 million over budget.

The Project should make every effort to curtail unnecessary spending in the ATO to ensure that it does not adversely affect the direct expense budget of work program 14.

---

[5] ATO budget = the original direct expense budget for work program 14, $4,249,830 plus approved MCN's $293,084 through June 30, 1997.

[6] ATO forecast = budget plus pending MCN's $19,400 through June 30, 1997.

[7] A July 1997 report released by the U.S. General Accounting Office estimates the current Project cost to be $11.6 billion. A Massachusetts Turnpike Authority preliminary official statement for the Metropolitan Highway System bond issue states the cost as $11.44 billion ($4.6 billion expended as of June 30, 1997; $6.84 billion projected through June 30, 2005). For purposes of this letter, we are using the lower of the two cost estimates.

[8] Work program 14 direct expense budget through June 30, 1997 excludes line item: Project Director's Reserve $1.9 million.

We would like to thank your staff for their cooperation in providing interviews and documents for this review. Please contact Diane Jones, project leader for this review, or me if you or your staff have questions or if we may be of further assistance.

Sincerely,

Wendy Haynes

Wendy Haynes, Deputy Inspector General
for Contract Audit and Review Division

cc: William Flynn, Deputy Director
Ron Grenier, Director of Administration and Finance Controls
William Smith, Senior Counsel

Massachusetts Highway Department
Central Artery/Tunnel

8

January 16, 1998

Office of the Inspector General
One Ashburton Place
John W. McCormack Building
Boston, MA 02108

Attn. Ms. Wendy Haynes, Deputy Inspector General
for Contract Audit and Review

Dear Ms. Haynes:

This is to acknowledge your letter dated December 22, 1997, which provided the Project with the results of our technical assistance request regarding our use of state blanket contracts to purchase computer hardware, software and related equipment.

We have reviewed your report internally and appreciate the review's thoroughness of our procurement practices. To further our mutual understanding, we wish to provide the following clarifying comments, organized in response to some of your office's assertions which appear in bold typeface below.

The Project should follow state laws and regulations for its procurement activities.

You assert that Bechtel/Parsons Brinckerhoff (B/PB) should comply with the state procurement regulations set forth in 801 CMR 21.00. As we have stated many times in the past, we do not agree with your Office's position on this issue.

The Project fully complied with applicable State procurement regulations in conducting its procurement of B/PB's services in the role as management consultant. Part of B/PB's management consultant scope of services is the provision of procurement services in accordance with the provisions of the Work Programs. B/PB has implemented procurement procedures which include adequate safeguards, including competitive procurements where appropriate. Although B/PB is not bound by state procurement regulations, nor are their procurement activities governed by them, the Department has directed B/PB to use state regulatory procedures, where appropriate, as guidance in conducting its procurement activities.

In two of the three cases the state blanket vendors' quotes were higher than non-state blanket vendors.

Your letter appears to take issue with the Project's position that multiple price quotes should not be necessary--nor advertising if the job exceeds the $50,000 threshold--if the commodity or service can be purchased from vendors under state blanket contracts, also known as statewide contracts. It is our understanding that State agencies are not obliged to seek multiple price quotes or advertise for items available on statewide contracts. The Commonwealth of Massachusetts *Procurement Policies and Procedures Handbook* (Part One, Section II, Page 4) states, "Once established, Statewide Contracts must be used by Departments for commodities and services offered under the Contract." To require the Project to repeat the State's competitive procurement process for the same commodity would appear to be a poor use of administrative resources. As stated in the Project's response to your Office's letter dated January 30, 1996 which recommended that the Project use the state's purchasing contracts, ... "[The Project] will utilize, to the extent possible, state blanket contracts that are proven to be competitive in price, quality, and schedule and do not have a negative impact on our very aggressive DBE program."

Over the course of two years, B/PB more than tripled its original $100,000 contract with Mahon Cable without benefit of additional competition.

The services provided by Mahon Cable Company, Inc. was originally competitively procured with an estimated budget of $100, 000. As additional work was identified, it was added to the existing blanket purchase order along with appropriate funding. The continuance of this blanket purchase order over an extended period of time was based on the fact that the Commonwealth had an existing blanket contract with Mahon Cable. At the time B/PB awarded its blanket purchase order until the present, the Commonwealth had blanket contracts with Mahon Cable which should have provided the most competitive price in the market place. B/PB's blanket purchase order with Mahon Cable is consistent with the practices of the State and the contractor has been responsive to the Project's schedules and the overall services provided have been satisfactory. In order however to adequately ensure receipt of the most competitive price, the Project is undertaking preparation of a bid package which will be open to state blanket contractors and other interested firms.

ATO's Direct Expense Budget is about 14 percent of the Work Program's budget, yet it is spending at a 15 percent rate...The Project should make every effort to curtail unnecessary spending in the ATO to ensure that it does not adversely affect the direct expense budget of Work Program 14.

The Project made a strategic decision to incur more costs related to automation in the earlier stages of the work program with a concomitant reduction in costs towards the end of the work program. Costs associated with ATO operation enhancements occurring early in the Work

Program 14, should reap benefits throughout the entire work program rather than just towards the end.

The reviews's inclusion of the phrase "curtail unnecessary spending" is unjust and misleading since it implies unnecessary spending is occurring. Expenses related to ATO have been necessary and properly incurred in order to effectively and efficiently support the ATO system's operation. MHD and B/PB reviews of expenditures in the ATO area have determined that the budget is being spent in an extremely cost effective manner. Please be assured that MHD will continue to ensure that ATO expenditures are appropriate and sufficient to meet Project needs.

Thank you for your responsiveness to our request, as well as your helpful recommendations.

Sincerely,

MASSACHUSETTS HIGHWAY DEPARTMENT

Peter M. Zuk
Project Director

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1998-00234K

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SECTION FOURTEEN

Technical Assistance Review of the Bidder Attraction Program

Assistance Requested:	July 31, 1996
Assistance Letter:	July 1, 1997
Project Responses:	September 5, 1997

Notes: The Project requested that this Office provide assistance by reviewing the Bidder Attraction Program. The Project enlisted this Office to suggest improvements to this program to attract additional bidders for Project construction contracts. This Office responded to the request by letter, dated July 1, 1997. The Project responded by letter, dated September 5, 1997.

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Massachusetts Highway Department
Central Artery/Tunnel

RECEIVED
AUG 0 2 1996
OFFICE OF
INSPECTOR GENERAL

July 31, 1996

Wendy Haynes
Deputy Inspector General
Contract Audit and Review
One Ashburton Place, Room 1311
Boston, MA 02108

Dear Ms. Haynes:

I am writing to request technical assistance in a number of areas for fiscal year 1997 under the terms of the Interdepartmental Service Agreement (ISA) the Department has with your Office.

The Project requests your Office's review of the following items, several of which your Office briefly reviewed in its Construction Field Operations Technical Assistance Report dated May 15, 1996. A brief explanation of the scope of the technical assistance is also provided following each item.

- **RE Files.** Review REs filing system to determine if it is adequate to the needs of the Project.
- **Field Engineer's Handbook.** Review handbook and suggest improvements. Recommend additional tools/resources for field engineer usage.
- **Bidder Attraction Program.** Review the Project's outreach efforts aimed at increasing construction firm participation in contract bidding. Suggest other mechanisms to increase the pool of eligible bidders for CA/T Project contracts.
- **Reprographics Department.** Perform cost benefit analysis comparing document reproduction at the Project's Reprographics Department with contracting out for the service.
- **ATO Blanket Contract Utilization.** Analyze the extent to which B/PB's ATO Department has utilized State blanket contracts for computer and related purchases. Recommend mechanisms for improvement, if warranted.

Further explanation of each of these areas can be obtained

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from either Ron Grenier at 342-4585 or Marie Hayman at 342-1344. Thank you for your assistance.

Sincerely,

MASSACHUSETTS HIGHWAY DEPARTMENT

Peter M. Zuk
Project Director

AD 2.4.2
096-2274

The Commonwealth of Massachusetts
Office of the Inspector General
One Ashburton Place, Boston, MA 02108

ROBERT A. CERASOLI
INSPECTOR GENERAL

JOHN W. McCORMACK
STATE OFFICE BUILDING
ROOM 1311
TEL: 727-9140
FAX: 723-3540

July 1, 1997

Peter M. Zuk, Director
Central Artery/Tunnel Project
One South Station; 4th Floor
Boston, Massachusetts 02110

Dear Mr. Zuk:

By letter of July 31, 1996, you asked this Office to provide the Central Artery/Tunnel (CA/T) Project with technical assistance by reviewing the Project's Bidder Attraction Program (BAP). Technical assistance, provided at the Project's request, aims to identify and improve problem areas or weaknesses. This letter summarizes our review of the BAP. We began our evaluation of the scope, implementation, and impact of the program in January 1997. We hope this information will help the Project to evaluate and strengthen its bidder attraction efforts.

The BAP began in April 1996 as part of the Project's effort to increase bid competition to ensure that the Project received the best price for construction work. MassHighway staff believed that the Project had experienced limited bid competition and that this limited competition might create higher bid prices. The BAP entailed contacting by telephone and through the mail both foreign and domestic construction contractors who had not previously bid on CA/T work.

Project staff stated that Bechtel/Parsons Brinckerhoff (B/PB) initiated the BAP with the approval of MassHighway and the Federal Highway Administration (FHWA). B/PB developed the program and hired a subcontractor to assist staff in completing the effort. B/PB had one goal: to increase the number of construction firms bidding on CA/T contracts. MassHighway staff concurred with B/PB's position that success would mean increasing the number of construction contract bidders but observed that, to date, the BAP had not attracted as many bidders as expected. Through January 1997, only three new firms had submitted bids either individually or as part of a joint venture.

Limited bid competition existed for many of the first 80 CA/T construction contracts. Generally, the same few firms bid on the larger contracts. For example: Modern Continental, Perini, J.F. White, Kiewit, Walsh Construction of Illinois, Cashman and a small group of other firms have dominated the CA/T Project's approximately $7.5 billion construction market. In many cases, these firms form joint ventures to bid on

CA/T contracts. Few new firms had entered the CA/T construction market since the beginning of Project construction. We commend the Project for initiating a BAP to address this issue.

Introduction

To complete this technical assistance request, we reviewed Project documents related to the BAP; researched and reviewed construction industry sources, contacted other state agencies, interviewed Project staff, and analyzed the BAP. We wanted to see if B/PB adequately planned, performed and managed the BAP and if the BAP had achieved its goal.

B/PB began the BAP by compiling a list of 107 domestic and international construction firms. Project staff told us that B/PB and Bechtel home office staff compiled this list by identifying firms that could do CA/T Project-type construction work. B/PB staff, with the help of a subcontractor hired to assist on the BAP Project, began contacting these firms. B/PB first made contact by telephone. If a firm showed interest, B/PB mailed an information package to the firm. B/PB also gave tours of the Project and provided MassHighway bidder prequalification[1] information to interested firms.

Documents provided by the Project show that of the 107 firms contacted through October 1996, 19 expressed interest in working for the Project. According to this Office's review, as of March 1997, MassHighway had prequalified 11 of these 19 firms for highway construction. According to MassHighway records, however, all but one of the firms had been prequalified *before* B/PB initiated the BAP. Five of these 11 prequalified firms have picked up bid packages for Project contracts since the introduction of the BAP in early 1996; three firms of these five have picked up packages for the first time.

Our analysis shows that, between August 1996 and January 1997, three firms contacted through the BAP had submitted bids. These firms submitted bids as parts of construction joint ventures with firms that had previously bid on and been awarded CA/T Project contracts. During the same period, three different firms (only one of which had BAP contact) showed an interest by picking up bid packages for the first time. Also, 13 firms (only one of which had been contacted through the BAP) that at one time had submitted bids or picked up bid packages showed a renewed interest by once again picking up bid packages.

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[1] M.G.L. c.29 requires that "any person proposing to bid [on highway construction work] . . . submit a statement under penalties of perjury setting forth his qualifications to perform such work." As set forth in this statute, MassHighway has established the form and details required for this prequalification.

The BAP has had some limited success; three firms have submitted bids for the first time. The Project should now determine the next steps for the BAP. According to Project staff, no definitive plans have been made to continue bidder attraction efforts. We believe that some opportunities still exist. The following findings and recommendations may assist the Project in deciding on its next steps.

Findings

1) **B/PB did not develop an adequate scope and action plan for the program.** To define and initiate the program, B/PB sent a letter to MassHighway in February 1996 that included a 10-step action plan and a program timetable. The 10-steps included:

- Identify top potential contractors (national and international) not currently bidding CA/T work (never bid/previously have bid/pulled plans and not bid). Produce a discrete list of contractor's to be targeted. Identify the contractor's reasons for not bidding. Identify B/PB contact person for each contractor.

- Identify local contractor's available for JV [joint venture] participation (currently/not currently involved).

- Identify local DBE [disadvantaged business enterprise] firms available for subcontractor participation (currently/not currently involved).

- Develop a package fine tuned, if necessary, to address the specific concerns (logistical, labor, etc.) of the targeted contractor, including: scope of future work, dollar value of future work, schedule for bidding, Project Labor Agreement, typical contract documents, DBE contractors, State's information package on doing business in Massachusetts, list of contacts for various State and City offices (e.g. Tax Department, DBE, Environmental, etc.)

- Send packages with an explanatory introduction letter to contractors.

- Make phone calls to the potential contractors' CEOs to invite them or their designee for a Project review. International contractors to be contacted by a B/PB contact known to the contractor.

- Advertisement in ENR and/or other trade publications indicating CA/T is seeking additional bidders.

- Contact the Boston Building Trades to assess if and how they may participate. Identify which (and whether) national trade organizations can help encourage bidding in the area.

- After having targeted specific contractors, assess merit of participating in industry shows and if required set-up a CA/T display.

- Evaluate the need for an open house at some point.

According to Project documents, B/PB planned to complete the program in a month at a cost of $65,000. B/PB did not complete the10-step plan. Also, we have not been able to determine the total cost of the program.

B/PB submitted an incomplete action plan. The action plan did not define, for example, how B/PB would compile the list of firms to be contacted and what type of work products could be anticipated. The importance of the program and the estimated program expense required a more detailed action plan and program description.

2) **B/PB used incomplete and subjective methodology for choosing firms to contact.** B/PB and Bechtel home office staff compiled a list of 107 firms, including 73 domestic firms, to contact through the BAP. Project staff told us that they used the *Engineering News Record* (ENR), a trade publication, as a primary source for compiling the list. Other sources included both Project and Bechtel home office staff.

Every year ENR publishes a list of the top 400 construction firms in the United States based on the value of contracted work. B/PB's choice of firms appears incomplete. For example:

- B/PB did not contact 58 firms that appear on ENR's top 400 list that, according to ENR, perform 20 percent or more of their contract work in the transportation field. B/PB also did not contact an additional 14 firms from ENR's top 400 list that performed between 10 and 20 percent of their work in the transportation field. B/PB chose, however, to contact firms with less transportation work and firms ranked lower than a number of other firms with substantial transportation work. B/PB staff stated that they believed that all eligible firms had been contacted.

- By contrast, 25 of the 73 domestic firms contacted by B/PB did not appear on ENR's top 400 list. Apparently, these firms had less than ENR's top 400 threshold of $50 million worth of contract work annually.
- Of the top 50 firms on ENR's top 400 list, B/PB contacted only 25. Of the remaining 25 firms, nine already have some connection to or have shown interest in working for the Project; two do not work in the transportation field and B/PB did not contact the remaining 14. Of the 25 firms that B/PB did contact, six perform less than 10 percent of their work in the transportation field.
- B/PB elected not to contact three New England firms on the ENR top 400 list: Morganti Construction (no. 64), Beacon Construction (no. 215), and Dimeo Construction (no. 267). Beacon had performed office reconstruction work for the Project in the late 1980's.
- B/PB did not identify or contact some of the firms that already perform major public construction work in Massachusetts but have not yet worked on the CA/T Project: Barletta Construction, PKF-Mark III Construction, and Gust K. Newberg Construction.
- B/PB stated that 19 firms contacted through BAP showed an interest in bidding on CA/T construction. According to MassHighway records, two of those firms had already shown an interest in the Project before the start of the BAP by picking up pre-bid packages.

In sum, our review showed that:

- B/PB did not contact all major firms with offices in the Northeast.
- B/PB did not contact other public agencies or authorities in Massachusetts that are involved in major construction.
- B/PB did not contact all major firms that have worked in Massachusetts' public construction in recent years.

B/PB staff could have obtained information about whether a firm does public construction in the Northeast (especially public work in Massachusetts), is prequalified for construction in Massachusetts, or more specific information about why the firm seemed disinterested in CA/T work. B/PB did not obtain this information. MassHighway could have used this information not only for the CA/T Project but also for all future MassHighway

Projects. Other state agencies with large public works programs such as Massport, the Massachusetts Water Resources Authority (MWRA), and the Massachusetts Bay Transportation Authority (MBTA) might have found this information useful as well.

B/PB staff noted that a limited pool of bidders is not unusual on large projects but did not contact other large construction projects around the United States. This contact could determine if bidder attraction had been a problem on other contracts, how severe the CA/T Project's attraction problem is compared to other projects, and what mechanisms other construction managers and government jurisdictions have used to attract bidders.

3) **B/PB violated state procurement policy in the hiring of the BAP subcontractor.** According to the Procurement Policies and Procedures Handbook promulgated by the Executive Office of Administration and Finance (effective April 1996), a request for response (RFR) must be distributed to at least three potential bidders (for a procurement valued over $1,000). B/PB failed to take this step. B/PB awarded the subcontract without following state procurement procedures or sound business practices.

4) **B/PB hired a subcontractor who does not appear to have been qualified to do the work.** B/PB, as MassHighway's agent, hired a subcontractor to assist with the BAP. The subcontractor had been working as a legal assistant for a California law firm and according to his resume, worked for Bechtel Corporation earlier in his career. The subcontractor, however, had not worked in the construction or procurement field for almost five years at the time of his hiring. And he was not hired to function as a legal assistant. Also, it is not clear if the subcontractor had any marketing experience. The BAP, as conceived by B/PB, is essentially a marketing effort. B/PB procurement staff, however, knew the subcontractor.

B/PB did not show it chose the most qualified subcontractor available for this task. Moreover, of the $10,000 spent on this contract, half - or $5,000 - had been spent on expenses such as airfare, food, and lodging. If B/PB showed that it chose the most qualified subcontractor available, the expense might have been justified. In this, case, it appears to be money misspent. Presumably, a local firm would have been qualified to manage or assist with the BAP. In that case, the Project would not have had $5,000 in expenses that could have been used for billable work hours. MassHighway should ensure that B/PB employs professional assistance with the requisite expertise for the job.

According to B/PB staff, B/PB hired the subcontractor because B/PB had no staff available to perform this work. B/PB and MassHighway wanted to get the BAP started and the B/PB staff person who had been assigned to the BAP began a leave of absence before implementation of the BAP. B/PB staff knew the subcontractor and had worked with him previously when he had been a Bechtel employee. In fact, Bechtel had begun the process of hiring him back at the same time that he received this B/PB subcontract. The subcontractor performed this two-week BAP subcontract with the CA/T Project while waiting for Bechtel to complete its hiring process.

5) **The subcontractor did little to justify his $10,000 contract payment.** The Project's contract with the subcontractor, now ended, included a scope of services that stated:

> SUBCONTRACTOR shall assess the Bidder Attraction Program ("BAP") and make recommendations as to how the CA/T Project can be successful in its marketing and searching efforts directed towards large multi-national construction contractors in an effort to communicate construction opportunities that these international firms would not know existed without this focused and concerted effort to build a pool of qualified contractors. In order to accomplish above, SUBCONTRACTOR shall perform the following tasks:
>
> 1. Follow-up and expedite a response from all firms that have received letters from the CA/T Project;
>
> 2. Conduct Project meetings and site tours with interested firms;
>
> 3. Provide firms with introductions to CIM [Construction Industries of Massachusetts], and 10 Park Plaza personnel;
>
> 4. Identify a short list of firms that the Program Manager and Project Manager should meet with;
>
> 5. Identify possible alternative solutions to the shortage of qualified bidders.

Based on our review of available Project documents and interviews with Project staff, the subcontractor only partially performed one of the five tasks outlined in his scope of work. According to Project staff, the subcontractor did follow up by telephone and through the mail with firms that expressed an interest in the Project. But the subcontractor did not complete this task during his two-week assignment. In fact, B/PB staff could not describe the specific tasks performed by the subcontractor during his two-week assignment. The Project provided no evidence that the subcontractor conducted meetings, provided site tours with interested firms, or provided introductions to MassHighway and industry representatives. We found no evidence that the subcontractor identified possible alternative solutions to the shortage of qualified bidders or that the subcontractor added value to the BAP at all. B/PB and Bechtel home office staff developed the contact list, B/PB staff prepared the information packets for mailing and made many of the telephone calls to the identified firms.

The contract did not require that the subcontractor prepare any written work product or work logs of any kind. Without a written work product it is unclear how the Project determined that the subcontractor should be paid.

6) **B/PB has not completed the program as planned.** B/PB's BAP action plan included 10 steps. According to B/PB's Procurement Manager, the Project has "done all [it] could to let firms know we are here." B/PB, however, had not completed three of the 10 action plan steps although B/PB staff stated that the program has ended. Program documents do not show that B/PB: 1) provided additional marketing and outreach such as attending trade shows or advertising for bidder interest, 2) conducted an open house, and 3) extended the program to identify subcontractors, including disadvantaged business enterprises (DBEs) or firms available for possible prime contractor joint ventures.

7) **B/PB should have kept better records.** Other than the initial letter from B/PB to MassHighway outlining the 10-step plan for the BAP, B/PB and MassHighway did not exchange letters or memoranda on the subject of the BAP. According to Project staff, B/PB did not prepare written program updates or a program summary. B/PB did not provide this Office with any correspondence relating to the BAP after the program began. No comprehensive written BAP work product exists. In addition, there is limited institutional memory on this undertaking since the BAP staff consisted of a subconsultant to the Project and Project staff who have since left the Project. As mentioned previously, without adequate records, MassHighway cannot assess the work the subcontractor or B/PB staff performed for the BAP.

8) **B/PB did not account for BAP costs.** As recommended previously in reports by this Office, the Project should track costs for cost-containment programs. B/PB's procurement manager estimated that the BAP cost $11,000 (including subcontractor costs) for expenses and an unknown amount for B/PB labor. B/PB's procurement manager did estimate, however, that up to 350 B/PB staff hours had been devoted to BAP. Assuming a $38.50 per hour labor rate estimate (maximum contract/work program rate for salary without a contractually required waiver), the total direct labor cost would have been nearly $13,500.

In addition, applying the average indirect expense reimbursement rate[2] for B/PB and home office work to the $13,500 labor cost adds $14,910 to the cost. We calculated B/PB's $2,841 net fee by taking 10 percent from the total value of direct labor and indirect costs. The total estimated program cost is:

B/PB Direct costs	$11,000
B/PB Labor costs	$13,500
B/PB Indirect costs	$14,910
B/PB Net Fee Estimate	$ 2,841
Total estimated costs	**$42,251**

We believe the total estimated cost is low since B/PB staff primarily responsible for the BAP had salary waivers and therefore earned more than the contract maximum of $38.50 per hour. Also, B/PB accrued home office expenses. The Project, however, provided no documents to show the extent of these home office efforts or their cost. As a result, we could not calculate total B/PB home office expenses and profit mark-up. The total cost as far as we have been able to determine, is less than B/PB's $65,000 BAP cost estimate.

9) **The Project should have initiated the BAP earlier.** It is unfortunate that the Project did not initiate the BAP earlier. After the Project bid and awarded the first series of large construction contracts in the early 1990's, the Project should have been concerned about the small pool of bidders. A BAP could have been initiated before almost $3 billion worth of construction contracts had been advertised and awarded. If the Project acts quickly, new bidders might be attracted to the construction contracts to be bid after 1997 in the area north of causeway, and at the I90/I93 interchange.

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[2] For the current contract between MassHighway and B/PB (work program 14) the indirect cost reimbursement rates are: Bechtel Corp - Project Office 109.89 %, Bechtel Corp. - Home Office 126.92%, Parsons Brinckerhoff - Project Office 111%, Parsons Brinckerhoff - Home Office 146.2 %. Although the home offices did perform some services, we did not use the home office cost percentages to determine an average. As a result, the total costs are underestimated. There is no way to determine from Project documents what percentage of work the home offices performed.

10) **We also recommend the following:**

- Identify and attract qualified subcontractors or mid-sized prime contractors who might be interested in submitting filed sub-bids for CA/T building construction contracts or who might want to participate as members of a construction joint venture or work as a subcontractor. There are at least five building construction contracts yet to be awarded.

- Contact all the firms that have in the past bid on but did not win CA/T contracts. Some of these firms bid infrequently or have stopped bidding. The Project may want to find out why these firms no longer bid or if they would be willing to bid more often

- Contact all the firms that have shown interest in the CA/T Project by picking up pre-bid contract plans and specifications during the past few years but that have not bid on construction contracts. The Project may want to find out why these firms have not submitted bids.

- Pursue FHWA staff recommendations to use the Internet to research, attract, and contact potential bidders. The Project is now in the process of using the Internet to advertise contracts. CA/T Project contracts currently appear on the State's new Com-PASS Internet site.

Thank you for the opportunity to provide technical assistance to the Project. We hope that MassHighway finds our comments useful. If we can be of any further assistance or if you have any questions or concerns, please do not hesitate to contact this Office.

Sincerely,

Neil Cohen, Chief
Contract Audit & Review Division

cc: William Flynn, Deputy Director

Massachusetts Highway Department
Central Artery/Tunnel

RECEIVED
SEP 9 1997
OFFICE OF
INSPECTOR GENERAL

September 5, 1997

Mr. Neil Cohen, Chief
Contract Audit & Review Division
Office of the Inspector General
One Ashburton Place
Boston, MA 02108

Re: Review of the Central Artery/Tunnel Project's Bidder Attraction Program

Dear Mr. Cohen:

Thank you for your letter of July 1, 1997, which reviewed the CA/T Project's Bidder Attraction Program ("BAP") and offered recommendations for program enhancement. We appreciate the effort which your office spent on this review and your suggestions for attracting more bidders to Project contracts.

I have attached the Project's detailed comments concerning your review of the BAP. Although, as you noted, there could have been different approaches taken to encourage more bidders to participate in the Project's procurement process, we believe that our efforts accomplished the objectives which we established for the BAP. Our records demonstrate that the BAP has attracted at least five new prime contractors to bid on CA/T Contracts. Four of these firms were identified prior to the conclusions of your review and one more after your review which bid on C15A2. The addition of these five firms who have bid on the Project's larger contracts (those in the $200 - $300+ million range), as well as a growing number of bidders on smaller contracts has nearly doubled the core of six firms that traditionally has bid on larger contracts.

The Project appreciates the OIG's review of the BAP and the recommendations that followed. We believe that the BAP was successful in attracting highly qualified domestic and international contractors to the CA/T Project. As experience has indicated, however, the task of attracting contractors to bid, particularly with respect to the large contracts, will require additional persistence and creative solutions. We will continue our efforts to attract new bidders and I am confident that these efforts will be successful. Your recommendations and continued technical assistance will help us to build on the progress we have made.

Sincerely,

MASSACHUSETTS HIGWAY DEPARTMENT

Peter M. Zuk
Project Director

AD-2.4.2
O97-2006

One South Station • Boston • Massachusetts 02110 • Phone 617-951-6000 • Fax 617-951-08

Attachment:

CA/T Project Comments on the Office of the Inspector General's Review of the Bidder Attraction Program

Summary:

The Bidder Attraction Program ("BAP") began in April 1996, in a proactive effort to attract additional construction contractors that possessed the unique qualifications, equipment and resources to perform on the CA/T Project. The program involved contacting more than 200 contractors throughout the world, and included companies that had previously bid, and those that had not. The program committed the resources of B/PB as well as those from the individual home offices of Bechtel and Parsons Brinckerhoff Quade & Douglas. Both the CA/T Project Director and the B/PB Program Manager directly participated in the BAP by conducting calls to or personally visiting prospective bidders.

The Office of Inspector General's ("OIG") review notes that the BAP was created to attract contractors in order to receive the "best price for construction work." While it is true that increased competition may ultimately lead to lower bid prices, the Project also wanted to attract additional contractors to broaden the Project's resource base, management skills and technical expertise.

In reviewing the efficiencies of the BAP, one has to acknowledge that the CA/T Project is one of the largest public infrastructure projects in the world, and includes extremely unique technical complexities (i.e., utility relocations, transit interfaces, tunnel jacking, soil mixing) that are not encountered on jobs in many parts of the world. The reasons contractors may not choose to bid on CA/T work are numerous and reach beyond the obvious technical qualifications noted above. The results of the BAP include a comprehensive survey of domestic and international construction companies, a listing of interested firms based on this survey and specific reasons why these firms have not bid on CA/T work.

CA/T Project records demonstrate that the BAP has attracted at least five new prime contractors to bid on CA/T contracts. Four of these firms were identified prior to the conclusion of the OIG review and one most recently which bid on C15A2. Bidding by these particular companies was made possible only by the numerous presentations and personal calls to executives of these construction companies as well as home office visits to out of state firms.

Accordingly, the Project disagrees with OIG's characterization that the Program had some limited success. The addition of these five firms who have bid on the Project's larger contracts (those in the $200 - $300+ million dollar range), as well as a growing number of bidders on smaller contracts, has nearly doubled the core of six firms that traditionally has bid on the larger contracts. The importance of these five firms participating in the bidding process should not be underestimated. To bid as a prime contractor on these large contracts requires the commitment of considerable time and extensive resources.

In terms of OIG's specific findings noted below, the Project has the following comments:

1. B/PB did not develop an adequate scope and action plan for the program.

Although OIG contends that the February 26, 1996 letter describing the plan for BAP does not define how the list of firms to be contacted was compiled, detailed meetings and discussions among MHD and B/PB staff determined the methodology utilized, including the resources and periodicals that were referenced. Furthermore, the type of work product to be produced was clearly spelled out in the February 1996 letter describing the BAP. As stated in that letter, the BAP required a discrete list of contractors to be targeted, the development of a marketing package to be sent to the targeted contractors, introduction letters to contractors and a listing of contractors' reasons for not bidding. Other tasks described included phone calls, identifying local DBEs for subcontractor participation and contractors available for joint venture participation. All of the required tasks, with the exception of those tasks that were considered duplicative in nature, were completed.

2. B/PB used incomplete and subjective methodology for choosing firms to contact:

Utilizing the resources of the CA/T Project office and Bechtel's and Parsons Brinckerhoff's home offices, as well as a number of trade periodicals, we believe that the BAP provided an invaluable tool to the CA/T Project. Below is a listing of various sources utilized:

- Engineering and News Record ("ENR") (1995 and 1996 lists of top construction firms);
- A number of periodicals including Tunnel and Engineering, and publications issued by the MOLES and BEAVERS;
- Letters to Senior Executives of Bechtel and Parsons requesting names of prospective companies;
- Canvassed B/PB employees for prospective companies;
- Received and utilized a prequalification list of MBTA and MHD; and
- List of contractors attending '93, '94 and '95 Contractor's Briefing.

The Project's focus concerning the BAP's methodology was more expansive than the OIG report indicates. Beyond criteria relating to dollar threshold and transportation experience, the Project believed it was also essential to focus on construction companies with specific expertise in tunneling, slurry/cut off walls, and foundations. In addition, it was also important to utilize the resources of the B/PB networks including the personal experience of senior executives who were most familiar with the construction industry.

The OIG letter report indicates that the Project did not contact three New England firms on the ENR top 400 list. However, one of these three firms, Morganti Construction Company had received invitations/information on the Project in 1994 and 1995 through our annual open house known as the "Contractor's Briefing." PKF-Mark III Construction, another of these three firms, also received information through the Contractor's Briefing in 1993. Since the third firm, Beacon Construction Company, was located in Boston and had previously worked on the Project, the Project was intimately familiar with the firm and was aware that it was not interested in bidding on the Project's large contracts. As a result, the Project determined that its efforts and resources would be more effectively applied to companies that were less familiar with the Project.

Although the OIG report concludes that the Project did not contact all major firms with offices in the Northeast, the Project did contact all of the major firms with offices in the Northeast *who were uniquely qualified for this type of construction work.* The OIG's letter also states that B/PB did not contact other public agencies in Massachusetts that were involved in major construction. However, the Project did contact the MBTA and received its approved bidders list. The Project determined that approved bidders lists from the MBTA and MHD would capture the majority of prime construction contractors in the Northeast region that are involved in tunnel and highway construction, therefore the Project chose not to request such lists from the Massachusetts Water Resources Authority (MWRA) and the Massachusetts Turnpike Authority (MTA), believing them to be duplicative.

The Project agrees with OIG's statement that it did not contact all of the major firms that have worked in Massachusetts public construction in recent years. *However, the Project did contact all of the major firms that the Project believed possessed the technical expertise and resources to perform work on the CA/T Project.*

As part of the BAP, a listing of specific information was developed to determine why domestic firms were not interested in the CA/T work. Responses given by the firms for not bidding included "not presently performing work in the Northeast geographic area," "present workload," "size of contracts," "public work," "nature of work," and "labor concerns." This information is available to the MBTA, MWRA, Massport, and MTA and other state, local and federal authorities and agencies.

Regarding OIG's comment relating to contacting other large construction projects in the United States, it should be noted that significant communications did take place with the Bechtel office in San Francisco which provided contractor-specific information on the BART Project in San Francisco and the WMATA Project in Washington, D.C.

3. B/PB Violated State Procurement Policy in the hiring of the BAP subcontractor:

B/PB's hiring of the subcontractor was consistent with CA/T Project Procedures and with State procurement policy.

4. B/PB hired a subconsultant who does not appear to be qualified to do the work:

The selected subconsultant possessed more than 20 years of procurement experience, both nationally and internationally and had an established network of contacts developed through his past experience with Bechtel. The Bechtel network was particularly useful in his contacting of international firms in Southeast Asia and domestic firms throughout the United States. Although the OIG letter maintains that a local firm could have provided marketing assistance, it is difficult to imagine marketing skills more valuable than a knowledge of procurement and access to an established national and international network, particularly in the time frame that was established for task accomplishment. Furthermore, at a billable rate of $50 per hour, there are very few firms that could have provided as qualified and knowledgeable subconsultant as that selected, particularly for the $6,600 that was expended.

5. The subcontractor did little to justify his $10,000 contract payment:

The OIG review correctly found that the subconsultant was hired at a time when other in-house staff was not available, particularly due to the accelerated bid schedule program and the concentrated effort needed to drive the project.

Within the limited time of two weeks, the subconsultant completed all but one of the five tasks assigned. As the OIG review also found, the subconsultant did provide follow-up by telephone and by mail to those firms who expressed an interest in the Project. He also identified and forwarded a list of four contractors to be contacted by the Project. These firms were in fact contacted by the Project Manager.

The subconsultant was also instrumental in facilitating a number of meetings and tours with interested firms, as well as providing introductions to the Construction Industries of Massachusetts (CIM). Due to time constraints, the subconsultant did not identify possible alternative solutions to the shortage of qualified bidders.

6. B/PB has not completed the program as planned.

OIG's letter stated that three tasks of the BAP action plan have not been completed.
The Project disagrees. With respect to the three tasks that the OIG concluded were incomplete, please note the following:

a. Additional marketing, such as attending trade shows or advertising for bidder interest:
The Project determined that it would not be cost effective to attend trade shows specifically for the purpose of marketing the BAP. Instead, it was decided that when individuals such as the CA/T Project Director or the B/PB Construction Core Manager attended the ENR awards ceremony or the MOLES dinner or similar functions, they would specifically make reference to the Bidder Attraction Program.

b. Open House:
Again, as with the trade shows, no open house specifically for marketing the BAP was established. Instead, employing a more cost effective approach, the Project invited contractors who were identified through the BAP to the Contractor's Briefing on October 21, 1996. At the briefing, these contractors were informed of upcoming contracts and had the opportunity to meet both local and national subcontractors and prime contractors. In fact, prime contractors made specific efforts to be very accessible to subcontractors and BAP contractors.

Beyond the trade shows mentioned above, the number of trade shows attended by CA/T Project officials are numerous and include the following:

- Federal Department of Transportation Trade Show
- Executive Office of Transportation and Construction Open House
- New England Minority Purchasing Council Open House
- Hispanic Chamber of Commerce Open House

c. Extending the Program to identify subcontractors, including DBEs or firms available for possible prime contractor joint ventures:
For the last seven years, the Contractor's Briefing has been a focal point for attracting subcontractors, including disadvantaged business enterprises (DBEs), and informing them of the CA/T Project. Marketing the Project to subcontractors, and DBEs specifically, has also been one of the major focuses of the Project's DBE unit. The unit is responsible for organizing the Contractor's Briefing and fostering joint ventures between primes and subcontractors. A recent example of this unit's success was the joint venture of Will Construction Co., a majority firm, and Webster Construction Co., a DBE. The Will/Webster joint venture was the successful bidder on the C19E5, Utilities Relocation, I-93 Leverett Circle/Storrow Drive contract in February 1997.

The DBE Unit, in conjunction with the Massachusetts Alliance of Small Contractors (MassAlliance), is also responsible for preparing the CA/T Construction Contractor's Resource Guide. The resource guide is a compilation of DBE/MBE/WBE firms located throughout the Northeast. The guide is indexed by category of work, average annual dollar value of business, aggregate bonding capacity, certifications, largest contract amount, as well as other pertinent information. The Construction Contractor's Resource Guide, along with the CA/T Goods and Services Resource Guide, has been prepared and updated over the last four years and has been distributed at all of the open houses noted above, as well as the Bechtel project offices around the country. The Project believes that both resource guides have been an invaluable asset to DBE firms and majority prime contractors and subcontractors. Finally, it must also be noted that the DBE unit, during the same time frame of the BAP, commenced its review of the mentor/protégé concept which also seeks to foster joint ventures between DBEs and prime contractors. Again, since an extensive marketing effort was in place for subcontractors and DBEs, the Project determined it was not required to extend the BAP program

7. B/PB should have kept better records:

It should be noted that from the outset, and throughout its duration, the BAP was discussed frequently at meetings and status updates were presented at three Project Management Monthly Meetings. The BAP also clearly documented and established a comprehensive listing of domestic bidders contacted and provided the basis given by the domestic contractors for not participating in CA/T Project bidding. A comprehensive listing of international firms contacted has also been developed by the BAP. In addition, as part of his responsibilities, the subconsultant developed a chronology of contacts with the domestic contractors and specific contacts with interested individual contractors. The chronology is composed of two listings, one of which is a listing of interested domestic bidders and the other of undecided domestic bidders.

8. B/PB did not account for BAP Costs:

As noted by the OIG, with the exception of the subcontractor costs, costs for the BAP were not specifically tracked by cost code. The BAP, as with other Project tasks, utilized Project staff members who have included the BAP task as part of their regularly assigned duties. This was a level of effort type activity. Although specific cost codes are kept for such tasks that relate to specific construction and engineering contracts and matters relating to specific external agencies, B/PB does not accumulate cost to tasks such as the BAP. As the OIG's letter noted, the total program cost was significantly lower than the original estimate of $65,000. The Project does not believe that more than 350 B/PB staff hours were utilized. Due to the comprehensive nature of the BAP, as well as the attraction of the additional five prime contractors who have bid on CA/T work, the Project's efforts were quite successful.

9. The Project should have initiated BAP earlier.

The Project agrees that the BAP should have been initiated earlier. Hindsight more often than not is twenty-twenty. However, the importance of this issue was not as apparent during the early 1990s when schedule was a top priority. Nevertheless, regardless of timing, the Project believes that the BAP was a proactive and successful program that increased the contractor base. The program has also provided clear insight into why some out of state contractors have not been participating as bidders on CA/T contracts.

10. The OIG recommends the following actions:

- Identify and attract qualified subcontractors or mid-sized prime contractors for CA/T building construction contracts.

To date, the Project has not engaged in a concerted effort to identify and attract qualified subcontractors or mid-sized primes *specifically* for bidding on building contracts. The Project has, as noted earlier, marketed heavily to qualified subcontractors and mid-sized prime contractors through the Project's DBE unit and MassAlliance. The Project will continue to proceed with the efforts of the DBE Unit and MassAlliance and will review the OIG's recommendation to expand the BAP.

- Contact all firms that have bid on CA/T work in the past and were unsuccessful. Determine why firms no longer bid.

Although a survey can be prepared for this effort, the question will remain as to the usefulness of the results. In communications with CIM, the Project has been informed of numerous reasons why contractors have not bid on CA/T contracts. Several of the reasons are noted earlier in this Attachment. However, the Project will review this approach to determine whether the benefits outweigh the costs entailed.

- Contact all firms that have picked up plans but not bid.

Again, as indicated above, this approach will be evaluated to determine the benefit versus the effort expended. It should be noted that numerous subcontractors pick up bid documents but do not meet prequalification requirements with MHD and therefore are unable to bid.

- Utilize the Internet to research, attract and contact potential bidders.

The Project agrees that this recommendation appears to be a cost-effective approach to contracting potential bidders, and plans on pursuing this approach.

SECTION FIFTEEN

Technical Assistance Review of the Resident Engineer Filing System

Assistance Requested:	July 31, 1996
Assistance Letter:	February 4, 1998
Project Responses:	April 13, 1998

Note: The Project requested that this Office provide assistance by reviewing the Resident Engineer filing system. The Project enlisted this Office to determine the adequacy of the filing system. This Office examined the quality of the filing system and the maintenance of key Project documents within the system. This Office responded to the request by letter, dated February 4, 1998. The Project responded by letter, dated April 13, 1998.

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Massachusetts Highway Department
Central Artery/Tunnel

RECEIVED

AUG 02 1996

OFFICE OF
INSPECTOR GENERAL

July 31, 1996

Wendy Haynes
Deputy Inspector General
Contract Audit and Review
One Ashburton Place, Room 1311
Boston, MA 02108

Dear Ms. Haynes:

I am writing to request technical assistance in a number of areas for fiscal year 1997 under the terms of the Interdepartmental Service Agreement (ISA) the Department has with your Office.

The Project requests your Office's review of the following items, several of which your Office briefly reviewed in its Construction Field Operations Technical Assistance Report dated May 15, 1996. A brief explanation of the scope of the technical assistance is also provided following each item.

- **RE Files.** Review REs filing system to determine if it is adequate to the needs of the Project.
- **Field Engineer's Handbook.** Review handbook and suggest improvements. Recommend additional tools/resources for field engineer usage.
- **Bidder Attraction Program.** Review the Project's outreach efforts aimed at increasing construction firm participation in contract bidding. Suggest other mechanisms to increase the pool of eligible bidders for CA/T Project contracts.
- **Reprographics Department.** Perform cost benefit analysis comparing document reproduction at the Project's Reprographics Department with contracting out for the service.
- **ATO Blanket Contract Utilization.** Analyze the extent to which B/PB's ATO Department has utilized State blanket contracts for computer and related purchases. Recommend mechanisms for improvement, if warranted.

Further explanation of each of these areas can be obtained

One South Station • Boston • Massachusetts • 02110 • Phone 617-951-6000 • Fax 617-951-0897

from either Ron Grenier at 342-4585 or Marie Hayman at 342-1344. Thank you for your assistance.

Sincerely,

MASSACHUSETTS HIGHWAY DEPARTMENT

Peter M. Zuk

Peter M. Zuk
Project Director

AD 2.4.2
096-2274

The Commonwealth of Massachusetts
Office of the Inspector General

ROBERT A. CERASOLI
INSPECTOR GENERAL

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STATE HOUSE STATION
P. O. BOX 270
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February 4, 1998

Peter M. Zuk, Project Director
Central Artery/Tunnel Project
One South Station; 4th Floor
Boston, Massachusetts 02110

Dear Mr. Zuk:

By letter of July 31, 1996, you requested that this Office provide technical assistance to the Central Artery/Tunnel (CA/T) Project in a number of areas including the bidder attraction program, the field engineer's handbook, the automated technology office (ATO) and the resident engineer's (RE) filing system. We included these technical assistance requests in our calendar year 1997 work plan. This letter addresses our technical assistance on a review of the RE's filing system. Specifically, you requested that we "review the RE's filing system to determine if it is adequate to meet the needs of the Project." Our review consisted of an examination of the quality and maintenance of key documents that comprise the RE filing system.[1] With this letter, we have completed all four[2] of the technical assistance requests made to this Office in July 1996.

In May 1996, we provided similar assistance to the Project by completing a technical assistance request in which we examined B/PB's construction management practices, including compliance with procedures governing the RE filing system. Specifically, we earlier reviewed the RE files for six construction contracts and identified several areas in need of improvement or further review. Our recent review employed a similar methodology, but on a more limited scale, to five different construction contracts. Our objectives included determining if the Project had remedied weaknesses in the RE filing system and documentation requirements we previously identified.

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[1] These documents included the Field Engineer Daily Reports (FEDR), the RE Drawings, field photographs, and deficiency reports.

[2] The Project originally made five requests but the Project withdrew one request relating to a cost/benefit analysis of the reprographics department. Apparently, B/PB had conducted this analysis after MassHighway made the technical assistance request to this Office.

We found that weaknesses still exist in the collection and maintenance of information by B/PB field staff. The Project has started to implement procedural and technological changes in the RE offices. The Project hopes to convert to an automated document control system that would standardize the filing system and reduce the need to keep duplicate copies on file. We cannot yet see the effects of these changes on the RE offices and the quality of contract information collected and maintained there. However, we believe that weaknesses will persist as long as field staff fail to comply with current procedures relating to field office operations. The following advises MassHighway of our review, findings, and recommendations.

We began this review of the RE filing system in August 1997 and completed the review in December 1997. During this review we interviewed Bechtel/Parsons Brinckerhoff (B/PB) staff assigned to, and examined the filing systems for, five judgmentally selected[3] construction contract field offices. [See Table One.] We also interviewed B/PB field and central office staff. We sampled the RE files to test for completeness and compliance with Project procedures.

Table One: Construction Contracts Reviewed

CONTRACT NUMBER	CONTRACT TITLE	DOLLAR VALUE (MILLIONS)	CONTRACT NOTICE TO PROCEED DATE	ESTIMATED SUBSTANTIAL COMPLETION DATE
C07D2	I-90 Logan Airport Interchange	$160	May 1996	November 2000
C09A8	Broadway Bridge and Utility Relocation	$ 58	October 1996	June 1999
C17A2	I-93 Central Artery – State Street to North Street	$154	March 1995	October 2000
C19B8	Ramps North of Gilmore Bridge	$ 50	January 1997	April 1999
R15A6	Anelex Building Demolition	$ 6	May 1995	November 1997[4]

Source: Prepared by Office of the Inspector General Staff based on Project documents.

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[3] We chose field offices for five active construction contracts that would provide a range of different construction activities, construction contract values, and completion status.

[4] This contract remains open although the construction work is substantially complete.

Findings

According to Project staff, B/PB's first contingent of construction managers introduced the RE filing system before Project construction began. B/PB, as construction manager for the CA/T Project, designed the RE filing system to assist B/PB field staff in managing day-to-day construction operations and to ensure an adequate paper trail upon Project completion. Project staff consider the RE files the official Project history for each construction contract. B/PB modeled the RE filing system after Bechtel Corporation formats and procedures, and used software Bechtel Corporation had developed on previous construction jobs.

In our review, we identified several files that the RE offices did not maintain according to procedure. In most cases, we identified these failings in other RE offices in our 1996 technical assistance. Despite MassHighway's efforts to ensure that B/PB staff complied with Project procedures, it appears that these problems still persist. For example:

- **Field Engineer Daily Reports (FEDR)**: B/PB staff use the FEDR as the primary historical record of daily contractor performance. Staff use the FEDRs to track contractor progress and work quality, to estimate payments to the contractor, and as evidence during claims negotiation.

In our 1996 technical assistance we noted that in many cases it could take about a month for field engineers to submit FEDRs and in some cases three months for management to review these reports. We also noted that the field staff generally prepare the FEDRs satisfactorily, but that in some cases they omitted critical information. We recommended that MassHighway hold B/PB accountable for ensuring that the FEDRs contain all necessary information and that B/PB ensure the timely preparation and review of these reports. MassHighway responded that it had instructed B/PB to perform more in–depth reviews of the FEDRs to ensure compliance with procedures.

During our 1997 review, we found that the field engineers in four of the five contracts we reviewed appeared to do an adequate job in preparing the FEDRs and appeared to follow all relevant procedures for FEDR preparation. However, the quality of reporting varied from contract to contract and in some instances the field engineers prepared the FEDRs poorly or omitted information. The most significant problem still revolves around the timely submission and review of the FEDRs. For one contract reviewed, field engineers did not submit FEDRs for three months. In four of the five contracts reviewed, it routinely took about a month for field engineers to submit the FEDRs for review. The review of the FEDRs by field staff supervisors and REs also took about a month – except in one case where it took four months.

Project staff stated that management reviewed and rejected the suggestion by B/PB field staff to have field staff use electronic note pads to complete reports on site. Project staff also stated that the Project is phasing in ORACLE, a new project management software package. This will allow the field engineers to enter their report directly into the system. Project staff expect this to create greater access to the reports, and a reduction in the amount of filed paper. However, if staff do not complete FEDRs fully, accurately, and in a timely manner, the FEDRs will not serve the needs of the Project.

> **Recommendation**: MassHighway should hold B/PB accountable for ensuring that FEDRs contain all required information including change order work and contractor deficiencies. B/PB should ensure that staff prepare, review, and approve FEDRs in a timely manner.

- **Deficiency Reports (DR)**: Project staff prepare DRs to document unacceptable contractor performance, work products, and procedures.

Our 1996 report found that staff did not consistently prepare and submit DRs. We also found that staff resolved many deficiencies unofficially and that staff did not record many deficiencies. We recommended that B/PB staff maintain clear records of deficiencies and deficiency negotiations. We also suggested that B/PB staff record and resolve deficiencies in a timely manner.

Our recent review showed that in two of the five contracts examined, deficiency reporting remained inconsistent. Staff did not record all deficiencies in the FEDR, on contract drawings, or in contractor payment records. For example, one contract office did not record a sampled DR concerning the elevation of a ramp in the FEDR for that day on the resident engineer's drawing or in the pay item control register under the pay item affected by the DR.

B/PB field staff should consistently record DRs in Project records, including the FEDR and the contract (RE) drawings. These documents comprise a significant portion of the official Project record for a given construction contract and so should include DRs. Incomplete DR records could have an adverse impact upon the Project's negotiating position with contractors regarding future claims.

> **Recommendation**: MassHighway should hold B/PB accountable for consistently recording DR information in the proper documents.

- **Resident Engineer Drawings**: B/PB retains the official record of construction activity for a particular construction contract on the RE drawings.

Our 1996 report found that field staff did not maintain RE drawings according to procedure. For example, staff did not adequately label drawings, did not annotate drawings where required, did not maintain up-to-date drawing logs, and did not append relevant documents to the drawings. MassHighway responded that it had instructed B/PB to ensure that staff follow the process for maintaining and updating drawings.

We found similar problems on two of the five contracts reviewed recently. Field staff did not amend or annotate drawings to reference changes made through contractor requests for information (RFI), or problems identified in deficiency reports. Also, staff did not have adequate or up-to-date drawing activity logs.

> **Recommendation**: We previously recommended that B/PB maintain the RE drawings according to procedure. We again recommend this course of action.

- **Photographic Records**: According to the Resident Engineer's Manual, photographs taken by Project field staff "often represent the single most important document that describes actual occurrences."

Our 1996 report documented the fact that many photographs were undated, disorganized, and without narrative or reference. Some film had not been developed until months after staff took the photographs. MassHighway responded that it had instructed B/PB to ensure that when photographs are taken staff follow procedures for the filing and storage of these photographs.

Our most recent review found that staff in three out of the five reviewed contracts do not clearly label or organize photographs. In one case, the photographs have no reference at all. Based on our review, B/PB has not improved its photographic records since 1996.

> **Recommendation**: In 1996, we recommended that staff adequately maintain photographs and that the Project should develop better guidelines or procedures for maintaining photographs. We again recommend this course of action.

- **Quality Assurance**: B/PB's quality assurance staff periodically audits RE office compliance with Project procedures. If an office does not comply, the quality assurance auditors prepare a corrective action request for the RE. Our recent review disclosed that in some cases, the RE offices failed to follow through on the corrective actions recommended by the in-house audit team. For example, the quality assurance auditors issued a corrective action request for one contract to ensure that the RE followed procedures relating to labor standards interviews and labor check reporting.[5]

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[5] According to the RE manual, the labor standards interview is a monthly interview of at least one worker for each contractor (sub or prime) on the contract. According to the manual, these interviews are necessary to ensure that the contractors comply with the various laws and contract requirements regarding workforce compensation. Labor check reporting is a monthly

Specifically, the RE should have conducted interviews and provided labor checks every month. Our review indicated that the RE is currently four months behind in conducting these monthly interviews and labor checks.

> **Recommendation**: B/PB should ensure that RE office staff take action to correct any procedural deficiencies identified by B/PB internal audit staff or by external audit staff.

B/PB Staff Opinions

B/PB field staff interviewed during this review believed that the RE filing system and its information requirements served its intended purpose – that is, organizing records and easing information retrieval. Most staff, however, also thought the system was cumbersome, required unnecessary paperwork, and required an overly large resource commitment. Based on staff interviews, office administrative staff contend that they spend between ten percent and 50 percent of their time maintaining the file system. Office managers spend between five percent and 15 percent of their time addressing specific requirements of the RE filing system. Some staff members believe that someone who does not have experience with the system will spend much more time maintaining the system. Staff stated that they never received formal training regarding the system. Staff had to learn the system through on the job training. The only formal training provided by the Project related to the correspondence control register (CCR). The CCR is a computer based tracking system used by field staff to record all incoming and outgoing correspondence.

B/PB introduced the CCR to the Project early in the Project's construction phase. According to Project staff, the CCR used database software developed by Bechtel Corporation.[6] All field office staff interviewed during this review labeled the CCR as cumbersome, impractical, slow, and unreliable. Most field offices maintain separate correspondence logs along with the CCR. When questioned about this, staff stated that they maintain the CCR only because procedures require it. Staff stated that field offices do not use the CCR as a tool. Staff also stated that the Project recently initiated the process of replacing the CCR system. In the interim, staff will continue to maintain the CCR and any manual systems developed to record and track correspondence.

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spot-check of contractor's (sub and prime) certified payrolls to ensure compliance with regulations regarding labor wages.

[6] According to Project staff, Bechtel Corporation received no payment for this software. The software had been part of B/PB's management plan.

Project Initiatives

According to Project staff and Project documents, the Project has made or plans to make a number of changes to the RE office filing system and documentation requirements. For example:

- The Project recently changed procedures to allow for change orders and their subsequent contract modification documents to have the same identification number. According to staff, this will ease filing requirements and speed file retrieval and communications. Previously, these documents had different numbers making the location of the documents difficult.

- The Project has also started implementing a new construction management computer system (ORACLE). Project staff believe that having documents in an integrated computer system will speed the flow of information and allow for greater access to information compiled and retained by the RE offices (for example, the FEDRs and deficiency reports). Project management hopes that the new system will dramatically reduce the amount of paperwork generated and retained by the RE offices. The lack of computers at the RE offices, however, may limit the success of this initiative. According to staff, B/PB will allocate more computers to the RE offices, but probably not enough for all staff. This may create data entry delays and may impede communications under the new system.

- According to Project staff, the Project plans to replace the CCR with ORACLE.

- During the past year, the Project revised and added procedures and RE guidelines.

- The Project introduced the field change notice (FCN). According to Project staff, the FCN will shorten the process by which the Project revises resident engineer's drawings and ensure better communications.

- The Project currently has document scanning under consideration for the RE offices. This will eliminate the need to maintain many paper files, and will provide applicable Project staff with ready access to those documents scanned into the ORACLE project management system.

- Electronic note pads for field engineers and CD-ROM drives for contract documents have been considered as well. However, Project staff believed that electronic note pads could not stand up in a construction field environment and so would have a limited useful life span. The cost would be excessive to furnish regular replacements. Project staff consider CD-ROM duplicative since the ORACLE system will contain the contract information considered for the CD-ROM.

The Project should monitor the impact of these changes in order to gauge the level of success. The Project should also consider testing the use of some technology like laptop computers and electronic note-pads where practical.

Conclusions

According to Project staff, in December 1997 B/PB completed a review similar to the type of review requested as technical assistance from this Office. We commend the Project for reviewing the operations of the RE offices and we support innovation that leads to more efficient and effective information flow and operations. We believe that MassHighway should review and implement, where applicable and where in accordance with State law and regulation, B/PB's recommendations for changes to RE office procedures and operations. MassHighway should also ensure that any changes made to Project document requirements or procedure in the RE offices do not alter the content, quality, or ability to retrieve the Project's historical records. These records are vital for the maintenance of accountability on the Project and for the protection of the Commonwealth in the event of litigation.

In the interim, MassHighway should address our findings dealing with the capture of complete and accurate information at the RE offices. We found in this review, as we did in a May 1996 review, that RE office staff do not always follow procedures and guidelines in the capture and organization of construction information. The RE's construction contract field offices remain primarily responsible for tracking contractor performance and creating an historical record of a specific construction contract. To create complete and accurate records, RE office staff must follow procedures and guidelines. MassHighway should ensure that B/PB follows Project procedure and remedy those instances where B/PB has not. Failure to follow procedures undercuts any assurance MassHighway may have that B/PB staff will maintain accurate and complete RE files.

Sincerely,

Neil Cohen, Chief
Contract Audit and Review Division

cc: William Flynn, Deputy Project Director
William Smith, Senior Counsel

Massachusetts Highway Department
Central Artery/Tunnel

Rec'd
4/22/98
M.C.

April 13, 1998

Office of Inspector General
P.O. Box 270
State House Station
Boston, MA 02133

Attn. Mr. Neil Cohen, Deputy Chief
Contract Audit and Review Division

Dear Mr. Cohen:

I am writing in response to your letter dated February 4, 1998 providing us with the results of your review of the Project's Resident Engineer (RE) filing system.

Your letter was shared with Project Construction, Administrative Services, and Quality Assurance Department personnel who in turn met and reviewed the findings and recommendations contained in your letter. We believe that this maximizes the exposure of your findings and recommendations particularly as your recommendations frequently reinforce the good practices or changes underway that you observed and supported in your letter. The Project's comments resulting from our internal review and discussion are organized by subject finding and the corresponding recommendation:

Field Engineer Daily Reports

Recommendation: MassHighway should hold B/PB accountable for ensuring that FEDRs contain all the required information including change order work and contractor deficiencies. B/PB should ensure that staff prepare review, and approve FEDRs in a timely manner.

Response: We agreed with the importance of completing FEDRs accurately and in a timely manner. We acknowledge that delays, while undesirable, may still occur on occasion in the review of daily reports by Lead Field Engineers due to the fact that there are several field engineers and multiple shifts on each of about thirty concurrent contracts each day. That is why our emphasis has been and will continue to be on ensuring that FEDRs are completed promptly and thoroughly by the Field Engineers on a daily basis.

We appreciate your acknowledgment of our phasing in of an ORACLE application in support of direct field data collection.

Deficiency Reports (DRs)

Recommendation: MassHighway should hold B\PB accountable for consistently recording DR information in the proper documents.

Response: We believe that we are consistently recording DR information and that the proper linkages exist between DRs and other construction management administrative cycles such as materials control, progress payments, and contractor performance appraisals. Please note that there is no requirement in current Project procedures to link DRs with the contract (RE) drawings nor does there need to be such a link. We review all outstanding DRs before payments are authorized to contractors to ensure that contractors are paid for work performed. In our opinion, to do more than this would be duplicative and wasteful of administrative effort.

Resident Engineer Drawings.

Recommendation: We previously recommended that B/PB maintain the RE drawings according to procedure. We again recommend this course of action.

Response: We acknowledge that all field offices have not been regularly and fully in compliance with our Project Procedures with regard to annotating contract drawings to reflect changes during the construction phase. On the basis of your previous recommendations on this subject and upon our own analysis prompted by internal audits, we have reassigned some of the responsibilities for maintaining contract drawings during the construction phase and are in the process of deleting others.

These changes are based on the conclusions of our analysis that showed that the CA/T procedural requirement that Resident Engineers mark up contract changes with red and green pencil were redundant with contractual requirements for the contractor to do these markups. Secondly, in accordance with industry practice, we concluded that the designer of record should be maintaining record drawing logs that reflect construction phase changes to contract drawings, not Resident Engineers . Consequently, we have made and are making the following changes:

- We have revised relevant Project Procedures and provided direction to our Section Design Consultants (SDCs) that SDCs maintain the Record Contract Documents Log, the Drawing Control Log and the Design Sketch Log. Resident Engineers are no longer required to maintain the Drawing Control Log.

- We are currently revising the relevant Procedure to delete the requirement that Resident Engineers do red and green markups of contract drawings to show construction phase changes. Resident Engineers will continue to be required to hand write annotations to drawings to refer to Project approved changes such as completed Requests for Information.

Photographic Records

Recommendation: In 1996 we recommended that staff adequately maintain photographs and that the Project should develop better guidelines or procedures for maintaining photographs. We again recommend this course of action.

Response: Please note that the Procedure for Progress Photographs was updated about two years ago to delete the requirement that Resident engineers take and maintain progress photographs on a regular basis to provide a continual pictorial record. This change was based in large part upon the redundancy of RE-produced progress photographs with the contractual requirements for contractor photographs. The Procedure currently reads that RE photographs, at his or her discretion, "...may be taken..." and states, further, that saving such photographs is also an RE option. When this change was promulgated, we neglected to change the policy statement in the introductory paragraphs of the Procedure, which still states that the RE must maintain a "pictorial record" and emphasizes importance previously attributed to this requirement. We will revise the policy statement to comport with current policy as explained above.

Quality Assurance:

Recommendation: B/PB should ensure that RE office staff take action to correct any procedural deficiencies identified by B/PB internal audit staff or by external audit staff.

Response: We agree with this recommendation. Our internal audits focus on the most problematic areas identified during RE office audits including the example you cited regarding conducting monthly interviews and labor checks and document those problems to Construction for correction.

If you should have any questions, or require additional information regarding these matters, please contact William J. Smith of my legal staff 951-6105.

Sincerely,

MASSACHUSETTS HIGHWAY DEPARTMENT

Peter M. Zuk
Project Director

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1998-00981K

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SECTION SIXTEEN

Technical Assistance Review of a Proposal to Use the A-B Method of Construction Contract Bidding

Assistance Requested:	August 23, 1996
Assistance Letter:	September 27, 1996
Project Responses:	No letter of response[4]

Note: The Project requested that this Office provide assistance by reviewing a proposal to use the A-B method of construction contract procurement. The Project turned to this Office to provide input on the use of this method, which involves bidding by contractors on both cost and schedule. This Office responded to the request by letter, dated September 27, 1996.

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[4] The Project is not required to respond by letter to work products issued by this Office.

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Massachusetts Highway Department
Central Artery/Tunnel

RECEIVED
AUG 26 1996
OFFICE OF
INSPECTOR GENERAL

August 23, 1996

Inspector General Robert A. Cerasoli
Office of the Inspector General
One Ashburton Place, Room 1311
Boston, MA 02108

Re: A - B Method of Competitive Bidding
Utility Relocation I-93 at Leverett Circle and Storrow Drive
Contract No. C19E5

Dear Inspector General Cerasoli:

MHD intends to use the so-called A - B method of competitive bidding on Utility Relocation I-93 at Leverett Circle and Storrow Drive, Contract No. C19E5 ("C19E5"). C19E5 is a utility relocation contract, and has an estimated value of approximately $11m. Bid opening is set for October 29, 1996, and substantial completion is scheduled to occur in February 1998.

A - B bidding involves bidding both cost ("A") and schedule ("B") with the "winning bid" being the one that offers the lowest net cost to the Commonwealth. That net cost is established by subtracting from the construction cost bid ("A") the assumed cost savings ("B") from "bid saved days" that the contractor bids (the "bid saved days" are subtracted to establish new contract milestone(s)).

Attached to this letter are the latest draft of the Special Instructions to Bidders which describe the proposed A - B bidding methodology as applied to C19E5, and a copy of an article appearing in the Journal of Construction Engineering and Management explaining the potential benefits afforded by the use of this type of bidding in public construction contracting.

A form of A - B bidding has been used successfully by the Federal Government, and on public construction contracts in: Maryland, North Carolina, Missouri, New York, California, Arkansas, Michigan, Utah, Minnesota, Georgia, Idaho, North Dakota, Virginia, Iowa and the District of Columbia.

Bechtel/Parsons Brinckerhoff ("B/PB") indicates that the successful use of A - B bidding on C19E5, and on subsequent contracts may allow the Commonwealth to realize savings in the form of a reduction to the overall CA/T Project completion schedule. B/PB also advises that schedule savings, available through the use of A

- B bidding, may be able to be used as a buffer against unanticipated delays to future CA/T Project construction.

We welcome your input on the use of A - B bidding on C19E5. In order to keep to our bid schedule on C19E5, we need to receive your comments in writing to Chief Counsel Kurt L. Dettman by September 13, 1996.

Thank you for your assistance on this matter.

Sincerely,

MASSACHUSETTS HIGHWAY DEPARTMENT

Peter M. Zuk
Project Director

PMZ/RSO/dl

CN-1.2
096-2678

The Commonwealth of Massachusetts
Office of the Inspector General
One Ashburton Place, Boston, MA 02108

ROBERT A. CERASOLI
INSPECTOR GENERAL

JOHN W MCCORMACK
STATE OFFICE BUILDING
ROOM 1311
TEL: 727-9140
FAX: 723-3540

September 27, 1996

Kurt Dettman, Chief Counsel
Central Artery/Tunnel Project
One South Station; Fourth Floor
Boston, Massachusetts 02110

Dear Mr. Dettman:

Thank you for the opportunity to comment on the Project's plan to use the so-called A - B method of competitive bidding on the contract for Utilities Relocation I-93 at Leverett Circle and Storrow Drive (C19E5). The Project should be commended for exploring innovative approaches to controlling costs and meeting the schedule for completing this enormously complex undertaking by 2004. In this letter, we respond to your request for input by offering cautions and raising questions aimed at assisting you and your staff in completing the Project on time and within budget.

We offer no opinion as to the legality of the A - B method of competitive bidding or the likelihood of successful legal action against the Commonwealth if it is used. We note, however, that the method you describe permits award of a construction contract to other than the firm that offered the lowest bid as it is customarily defined. The Project could by using this approach increase the Commonwealth's vulnerability to protest by disappointed bidders. The time lost due to the delay in award while the protests are heard could negate any schedule gains even if the Commonwealth prevailed on legal grounds. We are aware that you have requested input from the Office of the Attorney General and we defer to that Office's opinion as to the legality of the method you propose.

In addition to the information you included with your letter inviting our input (dated August 23, 1996), your staff has at our request provided relevant portions of the bid package (Division I general requirements and covenants, and special provisions) and B/PB Program Manager Spinks' letter discussing his rationale for recommending C19E5 for the initial use of this method. We base our comments on the description of the A - B method in the material you have provided as well as the knowledge we have developed in monitoring the Project for a number of years.

Because the C19E5 contract is relatively specialized and small (estimated at $12.6 million), it may not attract the bidder interest (and thus the potential for protest) that would occur on other contracts. We do not question the prudence of selecting a small contract for experimental purposes; however, we caution the Project against concluding that if this use of the

A - B method escapes protest, future contracts will, as well. It would be reasonable to predict that the larger the contract, the greater the interest among major construction firms who have both the resources and the inclination to protest Commonwealth actions. The Project may, however, have averted unanticipated objections by consulting certain construction associations and firms with relevant litigation expertise.

Even if the C19E5 contract proves to be a reasonable choice as a test of the vulnerability of the method to legal challenge, as B/PB has advised, it has very limited value as a test of whether the method will actually save time (and money). B/PB has correctly noted that utility relocation contracts have a "higher likelihood of delays and schedule growth than on other types of work." The subsurface work increases the possibility of delays due to unanticipated below-grade conditions.[1] This fact may, on the one hand, increase the need (and thus the value) of the contractor's efforts to make up for lost time, especially if the contract is on the critical path for other work. On the other hand, the vulnerability of subsurface work to delays increases the difficulty of determining whether the contractor delivered on the commitment to cut the number of days that the Project engineers estimated would be required to do the work.

The liquidated damages section in the bid package (Division I - 8.11 "Failure to Complete Work on Time") does not appear to factor in the cost to the Commonwealth of having awarded the contract to other than the lowest responsible bidder. We have not examined the basis for the Project's calculation of liquidated damages and cannot, therefore, comment on the reasonableness of the assessment in terms of the actual daily cost incurred by delay. However, we do suggest that the Project consider whether the difference between the low "A" bid and the "A" portion of the successful bidder should be included in the calculation of liquidated damages on a contract that has been awarded through the A - B method.

Success on this contract would not necessarily signal success on other contracts, particularly those that have multiple interdependencies with adjacent contracts. A key advantage to selecting a utility relocation contract for A - B method experimentation is that the work is usually the first construction activity at a site and is not typically dependent upon other Project construction contracts. For a contract such as the I-90 Tunnel Finishes or the various interchanges, the potential causes of -- and responsibility for -- delays are more complex. For instance, achieving a reduced schedule on one contract may depend on earlier site access or permits obtained through another contract.

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[1] According to preliminary analyses performed by our staff, about one-third of all CA/T contracts run behind schedule. For closed CA/T utility relocation contacts, only one out of eight contracts finished either on time or ahead of schedule.

The research on the A + B bidding method reported in the *Journal of Construction Engineering and Management* corroborates this concern when it concludes that "[t]he most popular types of projects that were selected for bidding were bridge work (replacement and rehabilitation) and resurfacing work." We saw little evidence in the literature you provided that this method is successful on complex projects with significant interdependencies. The article included little detail on individual cases, but many of the instances where the A + B bidding method has been used successfully appear to be stand-alone highway projects that share little in common with the complexities of the CA/T Project. As far as we could discern, most of the projects were not in a dense urban setting, with significant interface with businesses and neighborhood communities.

The authors also note the importance of contractor "motivation," presumably created by financial incentives. As you know, even a highly motivated contractor may not be able to surmount time lost due to delays on other contracts, unanticipated conditions, or Project decisions to alter the design. In such cases, by the method the Project proposes, the Commonwealth will have lost the financial benefit of the low bid in the conventional sense and gained no discernible advantage from the contractor's commitment to bring the Project in ahead of the schedule estimated by B/PB engineers.

It is unclear from the material provided by the Project how the adjustment for days saved was calculated and whether that figure would be adjusted for other contracts. In order to provide a more detailed analysis of the efficacy of B/PB's proposal, this Office would require additional information on the methodology for this and other calculations (e.g., liquidated damages). In the interests of timely response, we have deferred requesting additional material from the Project. If and when the Project decides to proceed, we would be willing to conduct a more detailed evaluation.

# # #

Clearly, the Project's proposal raises substantial questions about the benefits of this particular bidding method for the Commonwealth on the CA/T Project. From what we have read, the A - B method of bidding is not without merit and may be beneficial in certain limited circumstances. However, in light of the vulnerability of the method to challenge, and the complexities of the Project, we would advise the Project to further explore more direct methods of inducing (or motivating) contractors to bring work to completion ahead of schedule. By awarding the contract to the low bidder and including clear contract provisions for bonus payments based on actual days saved, the Project may be able to achieve its objective of tapping contractor commitment to shaving time from the construction schedule. In our view, this more direct method may avoid some of the pitfalls evidenced in the alternative method B/PB has proposed.

Please feel free to contact me if you have questions regarding this letter or if we may be of further assistance.

Sincerely,

Wendy Haynes
Deputy Inspector General for
Contract Audit and Review

cc:
Peter M. Zuk, CA/T Project Director
Francis X. Flaherty, Jr., Assistant Attorney General
James Sweeney, Assistant Attorney General

SECTION SEVENTEEN

Technical Assistance Review of a Request for Qualifications/Cost Proposal (RFQ/P) for a Public Information Outreach Initiative

Assistance Requested:	December 1997 (oral)
Assistance Letter:	February 3, 1998
Project Responses:	February 27, 1998

Note: The Project orally requested in December 1997 that this Office provide assistance by reviewing an RFQ/P package for a public information outreach initiative. This Office responded to the request by letter, dated February 3, 1998. The Project responded by letter, dated February 27, 1998.

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The Commonwealth of Massachusetts
Office of the Inspector General

ROBERT A. CERASOLI
INSPECTOR GENERAL

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February 3, 1998

Peter M. Zuk, Director
Central Artery/Tunnel Project
One South Station; 4th Floor
Boston, Massachusetts 02110

Dear Mr. Zuk:

I am writing to follow up on my telephone conversation last month with Kurt Dettman, Chief Legal Counsel to the Project, during which I briefly previewed certain concerns and questions regarding the initial RFQ/P[1] for creative services to develop a "Public Information Outreach Initiative." My comments were based on a preliminary review of an earlier version of the RFQ/P.[2]

The following more extensive commentary includes the RFQ/P version that was readvertised on January 5, 1998 and provided to this Office by your staff on January 14, 1998 in response to my request for the most recent documents. An increase in the contract amount from $750,000 to $2,000,000 (with no substantive change in the scope of services or qualification requirements) and altered time frames were the only significant differences between the two versions of the RFQ/P we reviewed.

- More than two-thirds of the scope and objectives focuses on public relations – that is, selling the Project to the public. Less than one-third aims at disseminating information related to transit options and encouraging changes in travel mode behavior.[3] In our view, spending public funds for a glossy or elaborate campaign to sell the Project to a public that is already paying for the Project would be wasteful. Low-cost, widely distributed, straightforward, factual information concerning transit options and traffic conditions certainly constitutes a legitimate and necessary "Outreach Initiative." But we caution the Project against selecting a firm proposing an outreach strategy that elevates form over substance.

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[1] For purposes of this letter, we use the Project's nomenclature (request for qualifications/cost proposal [RFQ/P]). The document is more commonly known elsewhere in the state as an RFR (request for responses).

[2] The earlier version, dated November 10, 1997, was received in this Office on December 18, 1998 following an oral request to you during a meeting with the Inspector General.

[3] We base these estimates on the narrative description in the RFQ/P. It is unclear what portion of the total dollar amount will be spent to either purpose (Project public relations or transit-related public information).

- The decision to contract out for these services raises questions as to why the public information staff and subconsultants already in place in the B/PB organization under work program 14 are unable to handle these tasks.

- The RFQ/P is silent on how the "Steering Committee" – referred to in the November 1997 version as the "Selection Committee" – will assess the qualifications put forward by the proposers or determine which proposal is most advantageous for the Commonwealth. Proposers must provide financial data, but it is unclear how the Steering Committee (Committee) will assess those and related data to determine the best firm for the job as it is vaguely defined in the RFQ/P. The absence of specific, measurable selection criteria opens the door to allegations that this $2+ million contract has been or will be awarded on the basis of factors which have no place in a fair and open competition.

  We reiterate the advice we have often provided in the past: The Project should place a premium on determining its needs in advance of issuing an RFQ/P and ensuring that the rules of the game are clearly laid out for all potential proposers (and the selection committee) to see. A description of how the Committee will recognize the best candidate should be developed and published before, not after, the firms are interviewed.

- The RFQ/P fails to define deliverables or to specify the basis for payment to the consultant. Moreover, the RFQ/P gives no clear indication as to how the Project will determine whether the goals have been met. Instead, the RFQ/P contains ambiguous and confusing references to an evaluator who will be hired by B/PB to evaluate the results of the program. It is unclear what the evaluator will evaluate or how – if at all – the results of the evaluation will be used to determine whether the consultant contract will be extended for another year. Although the earlier version of the RFQ/P indicated that the evaluation function would be independent of the firm you select but paid from the contract maximum amount, the newer version is silent on the topic.[4]

- Many of the special conditions at Exhibit B are "optional" (e.g., approval of key subcontractor personnel and progress reports). It is unclear how, when or by whom a determination will be made on which of these provisions are required or whether an earlier determination might have changed the pool of proposers.

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[4] Questions about the evaluator function were raised by prospective proposers during the pre-bid conference, but do not appear to have been addressed in the revised RFQ/P. We have not yet been provided with any addenda to the revised RFQ/P, so it is unclear whether new proposers posed similar concerns.

- The full cost of this public relations/public information initiative is not limited to $2,000,000. There is little doubt that B/PB administrative costs will increase the total cost of this initiative substantially whether by displacing other priorities or through costly add-ons to the existing work program.

- The RFQ/P leaves the door open for a one-year (six to twelve months of CY 1999) extension to an arrangement that, as currently written, could mean payments of nearly $200,000/month to the winning firm for the balance of 1998. The basis for negotiating the price of any contract extension is not stated.

Please feel free to contact me if you have questions or we may be of further assistance. As I explained earlier today to your point of contact, Marie Hayman, it would not be appropriate for this Office to sit on a selection committee for this procurement. We stand ready, however, to respond to such other technical assistance as you may request.

Sincerely,

Wendy Haynes, Deputy Inspector General
for Contract Audit and Review

cc: William Flynn, Deputy Project Director
Kurt Dettman, Chief Legal Counsel
Marie Hayman, Manager of Contract Administration

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Massachusetts Highway Department
Central Artery/Tunnel

RECEIVED
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OFFICE OF
INSPECTOR GENERAL

February 27, 1998

Ms. Wendy Haynes
Deputy Inspector General for Audit and Review
Office of the Inspector General
State House Station
P.O. Box 270
Boston, MA 02133

Dear Ms. Haynes:

Thank you for your letter of February 3 regarding the Public Information Outreach Initiative RFQ/P. It arrived in time to share with the members of the Steering Committee who came together that evening to review, as a group, the vendor proposals submitted on January 26.

I'm sorry that your office could not accept my invitation to provide a representative to serve on the Steering Committee or attend meetings as an observer, and I welcome the suggestions in your letter. The process we are completing this month reflects your suggestions. Let me respond specifically to the concerns raised in your letter:

- You suggest that more than two-thirds of the proposed campaign's scope focuses on "selling the Project to the public." Our view is that an integrated campaign including mass media advertising as well as complementary targeted public relations materials will provide practical traffic and transit messages while educating the public about the benefits and end-state of the project. The public needs information about what we're building, and we view such information as educational, not "selling." In essence, the job of the winning proposer will be to present issues of overarching interest to the general public (project scope, outcomes and benefits) as well as matters of short-term importance to the general public (day-to-day construction updates, traffic changes, transit alternatives). Such a dual mission appeared to be clear to the majority of proposers, based on their written response and collaterals.

- Your letter questions why the public information staff and "subconsultants" already in place are unable to handle these tasks outlined in the RFQ/P. No subconsultants or subcontractors under Work Program 14 have such tasks in their scopes of services. The Project's small in-house communications staff is devoted to handling daily requests from a wide array of media and developing routine collateral materials. In light of their current job responsibilities, time does not permit them to simultaneously create, develop, manage, and evaluate the kind of "big picture" communications effort envisioned by the RFQ/P. Staff will support and supervise the campaign's producer, so that all Project communications messages remain consistent.

One South Station • Boston • Massachusetts • 02110 • Phone 617-951-6000 • Fax 617-951-0897

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INSPECTOR GENERAL

- In terms of how the Steering Committee will assess the qualifications put forward by the proposers and determine which proposal is most advantageous to the Commonwealth, the RFQ/P contained the relative weights for how proposals would be evaluated: i.e., agency experience and fiscal soundness 25%; technical adequacy 45%; overall campaign feasibility and administration 15%; and, cost/budget 15%. Additionally, using these criteria, our process includes making available the description of how the Committee will recognize the best candidate prior to the firms being interviewed, as you suggested. All firms selected as finalists will be provided with an identical set of instructions for the oral interviews. They will be provided in advance with questions common to all the finalists as well as questions aimed at clarifying for the Committee statements contained in their individual proposals.

  You note that the Project should place a premium on determining its needs in advance of issuing an RFQ/P. As you are probably aware, State Procurement Regulations which we use as a guide for procurements made under the Work Program, recognize the fact that oftentimes desired services cannot be precisely defined during a procurement and in these cases it is sufficient to describe within an RFQ/P the specific outcomes or anticipated goals to be accomplished. We believe that the Public Information Outreach Initiative RFQ/P accomplished this mission.

- In terms of deliverables, the RFQ/P was deliberately silent on this issue. We expect the vendor selected to demonstrate spontaneously a fresh and creative outlook on the Project's communications strategy. New ideas from the outside may well influence the campaign and therefore the deliverables required to implement it within the proposed contract value. Once the contract is negotiated with the top ranked proposer, deliverables will be clearly articulated and payment will be tied to the satisfactory adherence to contract requirements.

  With respect to the issue of the evaluator, this refers simply to a process by which the project will assess the efficacy and impact of the public information campaign. The results of the evaluation will be a primary factor in determining whether the consultant contract will be extended and/or revised.

- In terms of the special conditions listed as "optional" (e.g., approval of key subcontractor personnel and progress reports) at Exhibit B, this section was part of a draft generic subcontract used for a number of different types of services on the Project. Whether "optional" conditions are included in an executed contract depends on the nature of the services to be provided. For instance, notification of key personnel changes may be important to the provision of services of some contracts but not others. In any event, those items listed as optional in this case, such as "Management Consultant Approval of Key Subcontractor Personnel," "Progress Reports" and "Funding and Subsequent Appropriations" have all been addressed in the Scope of Services section. We don't see anything in the optional section that contradicts direction provided in the instructions to proposers. In any case, we would be surprised if this affected the pool of proposers.

- As with all other programs at the Project, the cost of the Public Information Outreach Initiative will be closely monitored and any opportunities for cost containment will be utilized. An innovative related aspect of this initiative is the "leveraging" component which is intended to provide value in excess of the program budget.
- In terms of the basis for negotiating the price of any contract extension, this will be a component of the contract negotiation phase with the first ranked proposer. As stated above, the results of the evaluation will be a primary factor in determining whether to extend the contract.

Thank you once again for your suggestions. We believe your input has strengthened this procurement as well as reinforced the safeguards necessary to the successful stewardship of the public's interest.

Sincerely,

MASSACHUSETTS HIGHWAY DEPARTMENT

Peter M. Zuk
Project Director

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INSPECTOR GENERAL

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SECTION EIGHTEEN

Technical Assistance Review of Plans to Input Project Data Directly into the State's Management Accounting and Reporting System (MMARS)

Assistance Requested:	July 1998 (oral)
Assistance Letter:	December 30, 1998, April 12, 1999
Project Responses:	March 25, 1999

Note: The Project orally requested in July 1998 that this Office provide assistance by reviewing a proposal for Project staff to input data directly into the State's MMARS system. The Project requested that this Office provide input on the feasibility of this proposal. This Office responded to the request by letters, dated December 30, 1998 and April 12, 1999. The Project responded by letter, dated March 25, 1999.

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The Commonwealth of Massachusetts
Office of the Inspector General

ROBERT A. CERASOLI
INSPECTOR GENERAL

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BOSTON, MA 02133

December 30, 1998

William Flynn, Deputy Director
Central Artery/Tunnel Project
185 Kneeland Street; 10th Floor
Boston, Massachusetts 02111

Dear Mr. Flynn:

In July 1998, the CA/T Project asked for technical assistance from this Office in determining the feasibility of inputting payments from the Central Artery/Tunnel (CA/T) Project directly into the Management Accounting and Reporting System (MMARS). The purpose of this letter is to respond formally to that request and complete our obligation in this matter.

Our review included interviews with staff from the Project, MassHighway, and the Comptroller's Office. We informed John Henderson of your staff that in order to consider a request to data-enter payment voucher information directly into MMARS, MassHighway required an official Project proposal. MassHighway and the Project subsequently reached an agreement on the matter. This Office has not been advised of the specifics of the agreement.

If this Office were to review the agreement, we would include in that review consideration of internal controls to ensure compliance with MMARS procedures. We would likely advise the Project to assure itself that controls instituted for your use were consistent with those employed by MassHighway staff. The Project should also consider a periodic review from an independent source – perhaps MassHighway's internal audit group – to check for compliance.

Your staff also discussed and seemed receptive to our input on using Special Departmental Employees of MassHighway (SDEs) for MMARS data entry. SDEs report directly to MassHighway-paid staff, but their paychecks are issued by B/PB. Ultimately, MassHighway must decide whether using SDEs for this task would be the most appropriate course of action.

Assuming appropriate internal controls were in place, we know of no statutory provision that would prevent a department from using SDEs for MMARS data entry. We do, however, question whether it is prudent and necessary to assign this type of work to SDEs. We repeat our earlier caution to you regarding the use of "seconded"[1] employees: Using consultant staff in this manner could create problems with conflict of interest and questions about loyalty.

Usually, only state employees have been authorized to enter data into MMARS. M.G.L. c.29, §29A contains prohibitions against using consultants to replace state employees. Union employees or state employees could argue that SDEs have replaced their function. It would make sense for the CA/T Project to be conservative on this issue and avoid any delays or protests.

If contrary to our advice, you decide to use SDEs for MMARS data entry, we would urge you to present the specific facts of the situation to the State Ethics Commission for a determination on compliance with the conflict of interest law. In an earlier letter to you concerning seconded employees, the Commission noted that its "advice is necessarily general" absent more specific information and invited you to seek further advice as issues arose.

We consider that by this letter, we complete our response to your request for technical assistance. Please advise us if you require additional assistance in this matter. Thank you and your staff for their cooperation during this inquiry. If you have any other technical assistance requests please do not hesitate to contact us.

Sincerely,

Wendy Haynes
First Assistant Inspector General for
Megaproject Oversight

cc: William Smith, Senior Counsel
Ron Grenier, Director of Administration and Controls
Marie Hayman, Contract Administration Manager

---

[1] In the past, MassHighway has referred to staff paid by a private firm to perform the functions of MassHighway staff as "seconded" employees.

Massachusetts Turnpike Authority
Central Artery/Tunnel Project

Wendy Haynes
First Assistant Inspector General MegaProject Oversight
Office of the Inspector General
State House Station
P.O. Box 270
Boston, MA 02133

Dear Ms. Haynes:

We are in receipt of your December 30, 1998 letter concerning the use of Massachusetts Highway Department Special Departmental Employees for purposes of MMARS data entry.

We appreciate your efforts and advice in connection with this matter but do not believe it is necessary to submit a request concerning this issue to the State Ethics Commission at this time. We believe, as you point out, there is no statutory provision that would prevent a department from using special departmental employees for MMARS data entry. We have, as you know, inquired of the Ethics Commission on a number of occasion concerning the use of SDEs. The current proposed use in no way involves the potential for a conflict of interest because, first, the activities of the SDEs will be mechanical and ministerial; second, there is a system of controls in place which forbids the use of SDE's for data entry of BP/B or any of it's subconsultants materials; and third, there is a Massachusetts Highway Department employee reviewing the information before and after the data is inputted.

With the respect of the question of asking the Ethics Commission for an opinion on the applicability of MGL c. 29, s. 29A to the use of SDEs for data entry, we believe that the Project is not supplanting permanent state employees, but rather merely providing support for an activity that is limited by the life of the Project and for which special department employees with limited tenure are appropriately suited. In addition, since the Ethics Commission's jurisdiction does not relate to MGL c. 29, s. 29A, we choose not to request it to interpret a statute not within its purview.

We share your conclusion that the proposed activity is not prohibited by statute, and have established a system of controls under which compliance with all applicable statutes will be insured.

My point of contact on this matter is William J.Smith, 951-6105

Sincerely,

MASSACHUSETTS TURNPIKE AUTHORITY

William S. Flynn
Deputy Project Director

185 Kneeland Street • Boston • Massachusetts • 02111 • Phone 617-951-6000 • Fax 617-457-819

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The Commonwealth of Massachusetts
Office of the Inspector General

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April 12, 1999

William Flynn, Deputy Director
Central Artery/Tunnel Project
185 Kneeland Street; 10th Floor
Boston, Massachusetts 02111

Dear Mr. Flynn:

On December 30, 1998, this Office responded to a request for technical assistance in determining the feasibility of inputting payments from the Central Artery/Tunnel (CA/T) Project directly into the Management Accounting and Reporting System (MMARS). Your reply, which we received on March 25, 1999, appears to have misconstrued our comments concerning MassHighway Special Departmental Employees (SDEs).

Contrary to your letter, this Office did not suggest that you ask the State Ethics Commission (Commission) for an opinion on the applicability of M.G.L. c.29, §29A to using SDEs for MMARS data entry. We urged you to present the specific facts of the situation to the Commission for a determination on compliance with the conflict of interest laws if you decided, contrary to our advice, to use SDEs for MMARs data entry. Apart from those comments, we discussed M.G.L. c.29, §29A, which contains prohibitions against using consultants to replace state employees.

MMARS data entry is not one of Bechtel/Parsons Brinckerhoff's services under the current work program. To our knowledge, the Commission has not considered the issue of MMARS data entry by SDEs in its earlier letters to you. We again point out that the Commission invited you to seek further advice from it as issues arose.

Please contact me if we may be of further assistance to you on this or any other matter.

Sincerely,

Wendy Haynes
First Assistant Inspector General for
Megaproject Oversight

Enclosures

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SECTION NINETEEN

Technical Assistance Review of Project Compliance with the Public Notice Requirements of M.G.L. c. 149

Assistance Requested:	May 14, 1999
Assistance Letter:	August 9, 1999
Project Responses:	November 16, 1999

Note: The Project requested that this Office provide assistance by reviewing the Project's compliance with the public notice requirements of M.G.L. c. 149 during the contract bidding process. This Office responded to the request by letter, dated August 9, 1999. The Project responded by letter, dated November 16, 1999.

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Massachusetts Turnpike Authority
Central Artery/Tunnel Project

May14, 1999

RECEIVED
MAY 14 1999
OFFICE OF
INSPECTOR GENERAL

Wendy Haynes
Deputy Inspector General
for Mega Project Oversight
Office of the Inspector General
P.O. Box 270
State House Station
Boston, MA 02133

Re: Request for Technical Assistance

Dear Ms. Haynes:

Recently I reviewed a letter, dated April 20, that your office had sent to the Project's Chief Counsel regarding the Project's compliance with public notification requirements pertaining to its construction contracts. A response to that letter is currently being drafted and should be forwarded to you shortly.

In the interim, I am requesting technical assistance from your office to review and offer recommendations regarding the Project's general compliance with the public notice requirements related to its construction contracts.

My point of contact for this matter is Marie Hayman at 235-3300. Please feel free to call her at your earliest convenience.

Sincerely,

MASSACHUSETTS TURNPIKE AUTHORITY

William S. Flynn
Deputy Project Director

1999-01337M
AD - 2.4.2

185 Kneeland Street • Boston • Massachusetts • 02111 • Phone 617-951-6000 • Fax 617-457-8198

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The Commonwealth of Massachusetts
Office of the Inspector General

ROBERT A. CERASOLI
INSPECTOR GENERAL

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STATE HOUSE STATION
P. O. BOX 270
BOSTON, MA 02133

August 9, 1999

William S. Flynn, Deputy Project Director
Central Artery/Tunnel Project
185 Kneeland Street; 10th Floor
Boston, Massachusetts 02111

Dear Mr. Flynn:

This letter is our response to your May 14, 1999 request for technical assistance on the Central Artery/Tunnel (CA/T) Project's compliance with public notice requirements related to its construction contracts. Additionally, your staff told us that the Project anticipates a new audience of smaller contractors, and asked for our recommendations on educating them about CA/T requirements and helping them through the bid process. We welcome the opportunity to provide input and to assist you in ensuring that competition for CA/T construction contracts is fair and open. We appreciate the courtesy and cooperation of your staff in providing information during this review.

I. PUBLIC NOTICE REQUIREMENTS

Our assessment included reviewing documents from the bid packages for C01B1 (Vent Building No. 5) and C09A3 (Vent Building 1). We also interviewed MassHighway and B/PB staff about those contracts. In addition, we met with the Project's Director of Procurement and her staff to discuss the issues. In most respects for the two contracts we examined, MassHighway complied with statutory public notice requirements.

As part of our statutorily mandated reviews of CA/T building contracts,[1] this Office routinely evaluates the Project's compliance with the public notice requirements of

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[1] Section 67 of Chapter 205 of the Acts of 1996 states in pertinent part:

> [MassHighway] shall have jurisdiction over the selection of designers performing design services in connection with the ventilation of buildings, utility facilities, and toll booths to be constructed as part of the central artery/third harbor tunnel project, and shall construct, control, supervise or contract [sic] said structures; provided, however, that no construction or contractual agreement for construction shall begin prior to the review and approval of the inspector general.

M.G.L. c.149, which governs contracts for the construction of public buildings. In our March 23, 1999 letter to the Project concerning the C01B1 (Vent Building No. 5) and C09A3 (Vent Building No. 1) construction contracts we cited two examples of MassHighway's failure to comply fully with public notice requirements: MassHighway did not send updates to the *Central Register* listing recipients of the bid packages and did not name the final designer in the Form for General Bid and Form for Sub-Bid.

Project management has assured us that staff will comply on all future contracts. MassHighway's compliance with public notice requirements on CA/T construction contracts affords the Project a safeguard against bid protests -- something to be avoided in any case and certainly given the schedule pressures, costs, and high visibility of the CA/T Project.

In its reply of April 5, 1999, the Project agreed that the final designer's name should have been included on the Form for the General Bid and stated that it would include the final designer's name in the future on such forms. This Office expects that MassHighway will also name the final designer in the Form for Sub-Bid on all future contracts. Based on this Office's letter to the Project's Chief Legal Counsel dated April 20, 1999, and his reply of June 7, 1999, we understand that MassHighway will send on a weekly basis to the *Central Register* a list of all persons requesting plans and specifications for all future building construction contracts being bid pursuant to M.G.L. c.149, §§44-J.

Enclosed please find excerpted materials from *Procuring Construction Contracts under M.G.L. c.149,* a chapter in one of the Inspector General's training manuals for public purchasing officials.[2] The enclosed materials reflect a list of key compliance concerns for this Office, and so may be particularly useful to your staff. As we have in the past, we welcome and encourage participation of your staff in our seminars.

II. ORIENTING NEW CONTRACTORS

Your staff advised us that the Project anticipates a new audience of smaller contractors on future construction contracts[3] and is looking for ways to familiarize potential bidders with CA/T requirements to help them through the bid process. This Office stands ready to review and comment on any training materials the Project develops. Again, Project staff, or contractors themselves, might benefit from attending the Inspector General's seminars for public purchasing officials. Information about the seminars is available by telephone at 617.532.1205, or on the Internet at http://www.state.ma.us/ig/igmcppo.htm.

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[2] Office of the Inspector General, Massachusetts Certified Public Purchasing Official, DESIGN AND CONSTRUCTION CONTRACTING SEMINAR, Robert A. Cerasoli, Inspector General (1998).

[3] Examples mentioned by Project staff include Lovejoy Wharf Marine Facilities (C28B1), Spectacle Island Surface Restoration (C21C1), and Ancillary Highway Facilities North of Gilmore Bridge (C21C1).

We consider that by this letter, we complete our response to your request for technical assistance. If you require additional assistance with reviewing training materials for contractors, or with any other matter, please contact me or Helen Flaster, project leader for this review.

Sincerely,

Wendy Haynes
First Assistant Inspector General for
Megaproject Oversight

Enclosure

cc: Marie Hayman, Director of Procurement
Kurt Dettman, Chief Counsel

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Massachusetts Turnpike Authority
Central Artery/Tunnel Project

RECEIVED
NOV 24 1999
OFFICE OF
INSPECTOR GENERAL

November 16, 1999

Wendy Haynes
First Assistant Inspector General
for Megaproject Oversight
Office of the Inspector General
State House Station
P.O. Box 270
Boston, MA 02133

Dear Ms. Haynes:

Thank you for your response to the Project's request for technical assistance on our compliance with public notice requirements related to our construction contracts.

We share the goal of ensuring that competition for CA/T Project construction contracts is fair and open. In this regard, we found the excerpted materials you sent us from *Procuring Construction Contracts under M.G.L. c.149,* to be a useful and informative staff reference tool.

In closing, my staff asked me to pass along particular thanks to you for the work of Helen Flaster, your project leader for this review, for her insightful and constructive comments regarding the Project's procurement process.

Sincerely,

MASSACHUSETTS TURNPIKE AUTHORITY

WS Fly

William S. Flynn
Deputy Project Director

PR-1.2
Letter No. 1999-2820M

185 Kneeland Street • Boston • Massachusetts • 02111 • Phone 617-951-6000 • Fax 617-457-8198

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SECTION TWENTY

Technical Assistance Review of the Incentive Fee Program

Assistance Requested:	July 12, 1999
Assistance Letter:	February 7, 2000[5]
Project Responses:	May 11, 2000

Note: The Project requested that this Office provide assistance by reviewing the Project's proposed incentive fee program for construction contracts. This Office orally advised the Project of its key concerns in late 1999 and responded to the request by letter, dated February 7, 2000. The Project responded by letter, dated May 11, 2000.

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[5] The voluminous attachments to the original letter have been omitted. These attachments are available from this Office upon request.

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Massachusetts Turnpike Authority
Central Artery/Tunnel Project

July 12, 1999

RECEIVED
JUL 19 1999
OFFICE OF
INSPECTOR GENERAL

Neil Cohen, Chief
Megaproject Oversight Division
Office of the Inspector General
State House Station
P.O. Box 270
Boston, MA 02133

Dear Mr. Cohen:

On behalf of the Central Artery/Tunnel (CA/T) Project, I am writing to request the technical assistance of the Office of the Inspector General (OIG) regarding the CA/T Project's Incentive Fee Program/Contract Specification.

Presented to you and other members of the CA/T Project Oversight Coordination Commission on the afternoon of Thursday, June 24, 1999, by Joe Allegro, Assistant Project Director for Construction, and Richard DiFedele, Changes and Claims Administration Manager, the Program rewards a contractor for optimizing contract and CA/T Project schedules. A Program overview distributed at the presentation is enclosed for your convenience.

Please review this material and, at your earliest convenience, comment on OIG's plans for a technical assistance review of the Program/Contract Specification.

If you have any questions, or require additional information, please contact me at 951-6458 or Steve Burwell at 951-6551.

Sincerely,

John P. Gorman
CA/T Counsel

cc: William Flynn, Deputy Project Director
Kurt L. Dettman, Chief Counsel
Stephen D. Burwell, Counsel

Enclosures

185 Kneeland Street • Boston • Massachusetts • 02111 • Phone 617-951-6000 • Fax 617-457-8198

The Commonwealth of Massachusetts

Office of the Inspector General

ROBERT A. CERASOLI
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P. O. BOX 270
BOSTON, MA 02133

February 7, 2000

Patrick J. Moynihan
Project Director
Central Artery/Tunnel Project
185 Kneeland Street; 10th Floor
Boston, Massachusetts 02111

Dear Mr. Moynihan:

By letter of July 12, 1999, your staff requested that this Office provide the Central Artery/Tunnel (CA/T) Project with technical assistance by reviewing the Project's Incentive Fee Program (Program). Technical assistance, provided at the Project's request, aims to identify and remedy weaknesses and vulnerabilities in Project activities as early as possible. This letter summarizes the results of this Office's review.

Background

On June 24, 1999, Project staff briefed this Office and the other offices that comprise the CA/T Oversight Coordination Commission (OCC) about the Program. Staff from this Office reviewed the material provided by the Project and interviewed key Project staff about the Program.

The Project currently uses the Program only on the C17AA – I-93 Tunnel Finishes contract. However, according to Project staff, as of December 1999 the Project had not yet made an incentive payment to the contractor. The Project introduced the incentive fee provision into the C17AA construction contract bid package in November 1998. The Project recently updated the provision through the use of a contract modification.[1] According to Project staff, the Program provides the construction contractor with a financial incentive to meet or beat contract milestone dates, to mitigate certain delays without filing financial claims, and to work more cooperatively and efficiently with other contractors and Project staff. The Program provision contained in the C17AA contract states in part:

---

[1] The contractor and the Project signed the modification on September 24, 1999 and October 19, 1999 respectively.

> A. The Contract Access Restraints and Milestones set forth in the Contract Documents reflect the Department's assessment of the overall Central Artery/Tunnel (CA/T) Project schedule requirements at the time of bidding for this contract. Because the CA/T Project consists of numerous interfacing, inter-related construction contracts and because adherence to the overall CA/T Project schedule is critical to the success of the Project, such schedule requirements will change over time.
>
> B. In order to account for such schedule changes which are inherent in the nature of the CA/T Project, an Incentive Fee Program is being offered as part of this contract. The purpose of the Incentive Fee Program is to: **1) optimize the Contract Schedule in conjunction with the overall CA/T Project Schedule; 2) acknowledge that the Contractor's participation and success are key to optimizing these schedules; and 3) to compensate the Contractor for the Contractor's schedule flexibility, ingenuity, and efforts in working cooperatively with the Project and other Contractors and third parties in optimizing the contract and CA/T Project schedules.** [Emphasis added in bold type.]

According to Project staff, the Program provisions may change for each construction contract. Therefore the provisions used for the 17AA contract and reviewed by this Office may differ from those used for future contracts. According to Project staff, the Project may tailor the provisions for each contract to accommodate the concerns of individual contractors and Project staff.

This Office does not dispute the need for some flexibility, especially in the case of a new program that will grow and evolve over time. However, the basic structure of any incentive program should be established up-front and not negotiated later between the parties. The Project can reflect any technical differences among construction contracts in the evaluation criteria. Program uniformity will allow for easier implementation, monitoring and interpretation across contracts.

The Project set aside $13.5 million -- seven and one-half percent of the C17AA Project estimated contract value of $180.1 million -- as the incentive fee. According to the Program provisions, the Project will pay the incentive fee to the contractor in 19 installments (every four months) over the life of the contract.[2] To receive an installment payment, the contractor must first meet certain criteria as prescribed in the incentive fee provisions. Because the Program is voluntary, the contractor may withdraw at anytime but will forfeit a portion of the incentive fee it had already received.[3]

According to the Assistant Project Director, he proposed extending the Program to at least three other contracts,[4] and a Project staff committee will review all on-going and future contracts to determine the practicality of adding the Program to other contracts. The Project wants to extend the Program to so-called follow-on contracts such as tunnel finishes, control systems, and electrical work. These types of contracts put the "finishing touches" on major construction work. The successful completion of this finish work depends upon the on-time and satisfactory completion of preceding construction. On the CA/T Project, adjacent contractors may be performing different phases of work simultaneously. For example, one contractor may begin tunnel finish work in one section of a tunnel while another contractor completes heavy construction in a different section. This may create schedule and access conflicts among contractors. Ordinarily, the Project settles these and other conflicts by negotiating claims and change orders. The Project hopes that the incentive fee program will eliminate many of these conflicts thereby preempting costly contract claim settlements.

Project staff stated in the Program briefing that the Project's experience with the C05B1 – Tunnel Finishes contract provided the impetus for choosing the C17AA contract for the Program's trial use. According to Project staff, the C05B1 contract experienced many of the schedule and contract interface problems that the Project designed the incentive fee to address. Claims and change orders increased the cost of the C05B1 contract by 58 percent or $28 million. The Project awarded the C17AA contract, in February 1999, for $163.6 million. If the C17AA contract increases at a rate comparable to C05B1, the value of the C17AA contract could increase by more than $90 million, to a total of $253.6 million. Project staff stated that the Program might save tens of millions of dollars in claims on the C17AA contract.

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[2] If the contract schedule changes, the Project may adjust the payment allocation schedule originally divided by 19 periods to the number of newly determined periods.

[3] According to Project staff, the Project will recoup these costs from future progress payments to the contractor or other money due the contractor.

[4] C09B2 – I-90 Seaport Access Road, C20B2 – I-93 Electrical General Contractor, C22A2 – I-93 Furnish/Install IPCS.

Summary

This Office does not object to the concept of incentive fee programs. However, we have concluded that the Program provisions as currently written do not offer adequate safeguards against fraud, waste, and abuse. This Office based its conclusion on the Program's lack of adequate contractor oversight, a discretionary and subjective rating system, one manager's unilateral authority to change Program rules, and the lack of procedures and documentation requirements for Program management.

We urge the Project to ensure an adequate system of Program controls. For example, the Project should treat the calculation and payment of the incentive fee as they would any other payment to a contractor, consultant, or vendor. This process should include adequate documentation of the transaction and a multi-leveled review process. This will help to protect both the Project and the individual employees involved in the Program from potential abuses and lessen the Program's vulnerability to fraud, waste, and abuse. The Program may help to promote and improve communications between contractors and Project staff. Requiring Project staff to evaluate contractor performance regularly might encourage communication and aid in the identification of contractor performance issues before they impact the contract schedule.

At this time, the Program has no track record by which this Office can gauge the Program's success or failure in containing contract costs and schedule changes. Nevertheless, this Office believes that the following comments will assist the Project in evaluating Program potential, and in determining how or whether to continue with the Program. Project management has already been generally apprised of this Office's concerns, including the potential for violating public bid laws.

Conclusions and Recommendations

1) **Project managers should first obtain a legislative exemption from public bidding laws if they plan to use the incentive fee program.**[5] In this Office's opinion, the incentive fee program, as now constituted, violates

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[5] The Massachusetts Attorney General's Office noted in a November 1996 ruling regarding alternative methods of procurement, that the Project may seek "legislative attention" to new methods that, in the opinion of the Attorney General, violate Massachusetts law.

Massachusetts public bidding laws because the Project awards the fee to a contractor without the benefit of fair and open competitive bidding. Although the contractor must meet certain contractual obligations before receiving this fee, the contractor does not bid on these obligations. Instead, the Project chooses an arbitrary percentage of the estimated value of a construction contract as the fee. The Project then decides how to dispense the fee.

Furthermore, this Office concludes that adding the Program to pre-existing contracts would violate public bidding laws. Adding or deleting the Program from pre-existing construction contracts could generate strenuous objections from other contractors and compromise the integrity of the Project's bid process.

This Office requested in October 1999 that the Massachusetts Attorney General's Office opine on the incentive fee program. Once the Attorney General's (AG) Office does so, this Office will share the AG opinion with Project management.

The Attorney General's Office may concur with this Office's view that the incentive fee program, as currently written, violates public bidding laws. In that event, the Project should either not use the Program at all, or suspend the Program and seek the appropriate legislative exemption. In any event, Project management may benefit from this Office's review, whether for improving the Program itself, or for developing other approaches aimed at keeping the Project on schedule and within budget.

2) **A cost-benefit analysis of the Program could assist the Project in better assessing potential Program value.** The Project has provided this Office with no compelling evidence that the Program will cost less than the cost of negotiating the contractor claims that the Project designed the Program to eliminate. Instead, the Project has relied on anecdotal information available from other jurisdictions that have used similar incentive programs. According to Project staff, most other jurisdictions view the use of incentive fees favorably and the Project has no reason to doubt that this Program will achieve similar favorable results in Boston.

The Project would have benefited from an objective cost-benefit analysis before implementing the Program. A more thoughtful analysis of the options might have identified, for example, potential Program savings during the next contract between the Commonwealth and B/PB (Work Program 15) as a result of downsizing B/PB's claims and changes staff. In theory, if Project staff's explanation of the benefits is accurate, claims and changes staff will have fewer claims to deal with for the contracts using the incentive fee.

Conversely, an analysis of Program costs and benefits might have shown that the Project would increase costs or consume additional staff resources. The Program requires additional administrative work and time commitments from Project staff. The Program requires continuous contractor evaluation by individual Resident Engineers, the review of these evaluations by an Incentive Fee Review Board, and the processing of award decisions by the Fee Determination Official. These oversight activities require a substantial time commitment and will generate a significant amount of paperwork. These efforts may not require the commitment of *new* resources, but they will at a minimum require that existing resources be re-deployed to the Program. Reordering staff priorities to support a new program incurs opportunity costs that may or may not be offset by Program benefits. The Project must recognize the demands of this Program and determine if the goals and schedule of a particular contract merit the expenditure of scarce resources.

Additionally, the Program may have the unintended effect of increasing construction contract costs. Under the terms of the Program, the contractor uses its own resources to mitigate the schedule impact and other costs. It is likely that contractors will include at least a portion of the estimated cost of meeting the Program requirements in their bid prices. Potentially costly Program requirements include schedule impacts that a contractor would normally try to recoup by filing a claim with the Project. Moreover, the contractor must under the Program designate a dedicated Schedule Control Representative, prepare self-evaluations for the Review Board, and assume other administrative tasks. The reasoning behind the program assumes that a firm would attach a higher value to the incentive fee than to the claims it could file for schedule and administrative costs. However, contractors may bid higher to meet the obligations and then the Project will pay an incentive to the contractor for meeting these obligations. As a result, the total cost of the contract could increase, defeating the original cost-saving purpose for implementing the incentive fee program.

3) **The Program should include no less a system of checks and balances than that now used in the more traditional change order process.** As currently designed, the Program lacks an adequate system of checks and balances. While this Office is not endorsing the adequacy of the controls for the Project's change order system, the Program should have at least a comparable level of checks and balances. The Project should treat incentive

fee work as it would a change order paid on a time and materials[6] basis since the Project is essentially using the Program as a substitute for the claims and changes process.

In the current change order process, before Project management approves a change order and makes payment, a number of staff members review the change order and key staff must sign the order. Project procedures require a paper trail through which staff -- or an auditor or quality control entity -- can track the original claim and the negotiation process. Likewise, Project staff should closely monitor and document changes the contractor makes to its construction methods while attempting to maintain the incentive fee schedule.

A multi-layered review process that requires adequate documentation of decisions and actions on fee payments will decrease the Project's vulnerability to fraud, waste and abuse. The Project could be vulnerable to premeditated illegal activity or more innocent action such as a Resident Engineer recommending full fee payment to the contractor because of the camaraderie that had developed over a multi-year contract. The Resident Engineer might reward effort, good faith, or simply be unwilling to jeopardize a working relationship. Ultimately, inadequate internal controls increase staffs' vulnerability to criticism, whether or not the suspicion of objectionable behavior is justified.

Under the Program, the ultimate authority to set and award the fee rests with the Fee Determination Official – currently the Assistant Project Director for Construction. The Program does not subject the Official to a specific timetable for rendering a decision on the fee payment and for authorizing payment. This could create problems for the Program if the payment process takes too long. For example, the contractor might not want to wait longer for an incentive payment than it would for a change order payment. Presumably, the contractor has absorbed the costs for claims that it would normally have filed in a contract without the incentive program. Prompt payments make the incentive fee worthwhile. Late payments create cash flow problems for the contractor who may feel entitled to interest on any late payments. The Program also has an Incentive Fee Review Board, but the Board only makes award recommendations to the Determination Official. The Program gives the Fee Determination Official excessive authority regarding the setting and award of the fee. For example, the Determination Official decides if a contractor meets the requirements to receive an installment of the incentive fee, the Official may change the fee allocated for a given period, and may change the number of payment periods. At a minimum, another senior Project official should counter-sign the decisions of the Determination Official similar to the change order process wherein procedures require multiple approval signatures.

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[6] Time and materials refers to a method of contractor payment. When the "owner" authorizes the contractor to work on a time and materials basis, the contractor is compensated for work performed over a specified period of time for a fixed hourly rate plus expenses, overhead and profit. In part because the total cost of the work is not known ahead of time, this method of payment requires additional oversight to ensure that the owner is paying a fair price for work that has, in fact, been performed.

The Program provisions do not specify which Project staff will serve on the Review Board or as the Determination Official. Currently, the Determination Official and the Resident Engineer for the contract serve on the Board which considers the merits of the contractor evaluation and recommends an incentive payment for the contractor. This Office believes that this creates a conflict of interest for these individuals. The Resident Engineer works closely with the contractor and evaluates contractor performance.

The Official then establishes and authorizes the fee payment. To avoid any conflicts of interest, the Determination Official should not sit on the Board and the Resident Engineer should only offer testimony to the Board and should not assist in the deliberations. This would establish a clear delineation of roles and would allow for a more objective review of the evaluations and testimony presented to the Board.

The Program provisions also do not state what staff will provide oversight and quality control for the Program. Eliminating safeguards that apply to the change order process such as multiple approval signatures, Federal Highway Administration (FHWA) review and approval, MassHighway Board of Commissioner approval, and documented claim negotiation makes this process more vulnerable to abuse. Furthermore, the lack of a paper trail could undermine the Commonwealth's position should any matter related to the incentive fee payment (or construction phase changes) be litigated later on. Moreover, the absence of documentation could also reduce the possibility that FHWA would eventually relent and agree to participate in incentive fee-related costs.

At the time of this Office's review, there were no written Project procedures or guidelines that specified documentation requirements, necessary approvals, operating protocols, quality assurance mechanisms, and staff responsibilities. By eliminating many of the processes and controls that are already in place for the change order process and the contractor payment process, the

Project has in effect eliminated most controls for the disbursement of $13.5 million on this contract alone.

4) **The Project should monitor incentive fee work, as it would change order work.** To earn the incentive fee, the contractor will make work changes to maintain the contract schedule. A review of Program documents indicates that no provisions have been made for Project staff to monitor these work changes. The Project expects the contractor to use its own resources to cover the costs associated with maintaining the schedule. But the provisions do not establish a monitoring process; the Program only requires the contractor to file a notice with the Project to explain the actions the contractor will take to maintain the schedule. The provisions do not specify the information requirements for the notice or what the Project expects from the contractor in the contractor's attempts to maintain the schedule.

In a contract that does not include an incentive fee provision, the contractor would file a claim if it met with difficulty and the Project would have an opportunity to help resolve these difficulties (e.g., mediating between contractors, approving schedule recovery plans). If the Project planned to pay for a claim, then the contractor would have to submit plans for approval and document the time and materials used for the work included in the claim. Project staff would then monitor the contractor's work to verify the time and material expenses. The Project would only pay for what it gets from the contractor.

When working under a change order mandate the contractor does not have a strong incentive to work at least cost. The Project reimburses the contractor for its expenses. Under the Program, the contractor may take the path of least resistance and least cost to resolve difficulties -- a basic market-driven response to increase profits. Program provisions contain no direction for the Project to monitor any contractor efforts to maintain the schedule.

Also, in order to meet the schedule, contractors may enter into agreements with adjacent contractors to mitigate delays. The incentive fee contractor may even share the fee with other contractors as an inducement to mitigate delays. Although the Project may not object to this practice it may create control issues for the Project. The Project and the incentive fee contractor might have different priorities for an adjacent contractor, eventually causing the contractor to claim that the Project unreasonably impeded its schedule-attainment activities and thus unfairly reduced eligibility for the incentive fee.

5) **The Program should use more objective criteria to evaluate contractor performance.** Currently, the Program uses subjective criteria to evaluate the contractor. The Program provisions require a contractor evaluation every 120 days rather than an evaluation at scheduled contract milestones. The evaluation determines if the contractor complied with its obligations under the Program. The two-part evaluation process requires the contractor to submit a self-evaluation for the fee period while the Resident Engineer prepares a numerical evaluation that rates the contractor's performance based on five evaluation criteria.[7] The Program procedures, however, do not specify the type, source, or format of the information considered by the Resident Engineer in the evaluation. Each contractor and Resident Engineer can submit his or her own version of the required information. The Resident Engineer could, in theory, use a different methodology for each fee period for the same contract. The provisions also assume that the contractors will submit an objective analysis of their own performance. The Project should make the provisions clearer by using examples, including sample reporting formats, and sample evaluation calculations. In addition, the Review Board may draw different conclusions from the evaluations or give them different weight depending upon subjective factors such as the reputation of the contractor, prior contractor performance, and the competence or personality of the Resident Engineer. The Resident Engineer's relationship with other members of the Review Board may also be a factor. The Program does not control for these subjective factors.

The Resident Engineer for the contract chooses a percentage between zero and 100 for each of the five evaluation criteria. This percentage is the Resident Engineer's grade for the contractor for each evaluation criteria. The performance range for this percentage allocation appears as follows: 80–100, 51-79, 10-50, 0-10, and 0.[8] This means that the same performance criteria apply to the Resident Engineer's assignment, for example, of either 51 or 79 to the contractor. The provisions give the Resident Engineer full discretion as to how and why the contractor would receive either a 51 or 79 --- a 28-point difference. And Program provisions do not require the Resident Engineer to document the reasons for this determination. The point differences, however, equate to different fee payments. For example, the 28-point difference for fee period 12 amounts to nearly $25,000. Over the course of all 19 periods for the C17AA contract this difference could amount to almost $500,000.

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[7] The criteria are Procurement (15 points), Contract Milestones (30 points), Timely Recovery of Schedule (15 points), Shared Access (20 points), and Discretionary (20 points).

[8] An earlier version of the Program provisions contained smaller ranges: 95-100, 90-94.9, 80-89.9, 70-79.9, below 70.

These ranges allow the Resident Engineer great latitude to determine a rating. The Project will have difficulty defending what may appear to be an arbitrary rating should the contractor decide to take legal action. This Office recommends that the Project establish smaller ranges tied to more specific goal-oriented criteria. The Project should also set minimum scoring requirements and should define what score a well-performing contractor should expect to receive. Setting minimum requirements creates a standard. Setting a standard would also establish a basis for a high score from the Resident Engineer. Performing ahead of schedule, for example, rather than simply maintaining the schedule, might merit a higher score.

The provisions establish subjective criteria categories. The Resident Engineer can use a purely subjective impression of contractor activity to score 40[9] of the total 100 evaluation points. Criterion guidelines do not define scoring methods for the Resident Engineer.

Recently, the Project provided this Office with a draft of revised Program provisions for the C17AA contract. These revisions include changes to the performance criteria making them *more* subjective. For example, the criteria for the range of 80 to 100 points previously stated that the contractor had to comply with the evaluation criteria *at all times*. The revised criteria state that the contractor has to *nearly always* comply. The Project made the criteria more subjective and weakened the evaluation process by not providing clear guidelines to the Resident Engineer. The evaluation process relies heavily on individual discretion. Conceivably, a conscientious Project staff person might give a different rating under the same circumstances.

The Project can improve the evaluation system by setting specific contractor goals and by assigning points for goal attainment. For example, the Project can award material procurement points for specific actions. If the contractor procures a number of specific materials before beginning work, the Resident Engineer can grant points based on the number of material groups procured -- ten gets ten points, nine out of ten gets nine points, etc. For schedule recovery, the provisions require the contractor to submit notices that detail recovery plans. The Resident Engineer should track these contractor submittals. Timely submittals garner a set number of points. The Resident Engineer can add or deduct points based on the quality of the submittals.

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[9] These points relate to the "discretionary" and "shared access" evaluation criteria categories.

Project staff have stated that the Program rewards performance. The Project should therefore develop measures to monitor performance. The National Aeronautics and Space Administration (NASA) uses incentive fee contracts but its regulations state that the agency may only use award fee provisions when the agency can measure contractor effort "objectively . . . in terms of technical and quality achievements, schedule progress or cost performance."[10]

In addition to the previous comments, this Office observed the following in a review of the evaluation section of the Program provisions:

a. The columns of the Evaluation Criteria – *Available Point Allocation* table do not add up correctly.

b. Section 4.02 – Evaluation Procedures, Sub-section C, states that the authorized representative or Resident Engineer for the contract will "numerically rate each of the evaluation criteria." However, Section 4.03 – Evaluation Criteria and Score – Basis of Payment, Sub-section B states that the Fee Determination Official "shall make a judgement and apply its discretion in choosing a percentage range and assigning a percentage evaluation. . . ." The Project should clarify or reconcile the differences between Sections 4.02 Sub-section C and Section 4.03 Sub-section B.

c. The Program provisions should explain more clearly how the numerical contractor evaluation system is used to calculate a fee period payment. Project staff and Program participants might find the inclusion of a chart illustrating payment values (in dollars) for each period helpful. Also, the Project might include a sample format of a calculation sheet that would illustrate how the payment is determined for a given period. For example:

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[10] Cibinic, John Jr. & Ralph C. Nash Jr., *Formation of Government Contracts, Third Edition*, The George Washington University, Washington D.C., 1998.

Evaluation Criteria	Points Available for Period 12		Percentage of Points Granted (0 to 100 %)		Points Awarded for Period 12
Material Procurement	0.5	X	.80	=	0.4
Contract Milestones	1.0	X	.75	=	.75
Timely Recovery	1.0	X	.90	=	.9
Shared Access	1.4	X	.65	=	.91
Discretionary	1.0	X	.45	=	.45
TOTAL	4.9				3.41/4.9=.7
	$13.5M x .049 = $661,500				$661,500 x .7 = $463,050

Chart prepared by Inspector General staff based on information provided by the Project.

d. The Provisions do not specifically state if the Fee Determination Official can use unused portions of the fee pool for future payments. For example, if the contractor can earn $100,000 for a given period but the Official only grants the contractor $80,000, can the Project award the remaining $20,000 later in the contract?

6) **The Project should encourage FHWA financial participation in the Program by making the Program changes FHWA suggested.** Although the FHWA did not object to the Project using the Program, it declined to provide funding towards the fee. FHWA officials stated to this Office that their agency declined to participate because of the subjectivity of contractor evaluation criteria and the lack of any contractor disincentives.

FHWA officials stated that the FHWA would reconsider participating in Program funding if the Project revised the Program provisions. Currently, the Commonwealth funds the $13.5 million fee completely. The Project might wish to consult NASA and the Department of Defense concerning their experiences with incentive fee type contracts. Both agencies have been using these contract types for decades and have developed manuals that supplement federal regulations.[11] Also, the New Jersey Department of Transportation and the New York City Department of Transportation have recent experience with incentive contracts.[12] The Project might find the experiences of these other transportation agencies useful case studies. [See Appendix One.]

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[11] Cibinic, John Jr. & Ralph C. Nash Jr., *Formation of Government Contracts, Third Edition*, The George Washington University, Washington D.C., 1998.

7) **The Project should revise the Program provisions to remove the sections that allow contractors to opt out of the Program and then reapply.** The Program now allows the contractor to opt out of and rejoin the Program with the Project's permission. Upon withdrawal, the contractor repays a percentage of the fee. This repayment percentage gets smaller in the latter stages of the construction contract. The Program permits the contractor to opt out when large claim potential exists and then opt back in when the potential for claims is smaller and the incentive program again looks like a better deal. Project staff claimed that contractor participation in even just one fee period provides a benefit to the Project. This Office knows of no evidence to support staff's belief. The Project should not allow the contractor to opt in and out of the Program during the length of the contract.

8) **The Program should include *disincentive* clauses for the contractor to discourage poor performance, schedule delays, and missed deadlines.** The Program provisions contain no disincentives for the contractor apart from the Project's ability to reduce incentive fee payments and require fee forfeiture by the contractor upon withdrawal from the Program. The provisions also do not describe how the payback will occur.

   The provisions should contain additional disincentives such as penalties for not meeting schedule milestones. In this Office's view, simply reducing the incentive fee payment does not create enough of a disincentive for poor performance. The standard contract contains liquidated damage penalties for not meeting schedule commitments, but Project documents received previously by this Office and statements by Project staff show clearly the Project's reluctance to use the liquidated damages penalty.

   If reducing the incentive fee remains the only disincentive used by the Project then the Project should consider introducing an automatic reduction in the incentive fee paid. The automatic reduction would occur if the contractor does not meet schedule milestones or other criteria. For example, the Project might lower the contractor's fee payment for a given fee period by ten percent for every day the contract remains behind schedule. Or the Project might reduce the fee by ten percent for each day the contractor fails to submit a schedule recovery plan. Automatic penalties would also help to reduce the subjectivity of the evaluation criteria.

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[12] *Engineering News Record*, September 6 and October 25, 1999.

Upon the contractor's withdrawal from the Program, the Project requires the contractor to forfeit a percentage of the total fee earned from Program participation. Program provisions should explain more clearly the amounts to be forfeited and how this forfeiture relates to the payback percentages also contained in the provisions. Section 4.04(A) (2) of the provision states that the Project will deduct "the full amount of the incentive fee. . .for any incentive fee period during which the [contractor did not comply with Program rules]." Also, the payback provision are smaller near the end of the Program because, as Project staff explained, the Project believes that at that point the Project has already benefited greatly from contractor participation (i.e., schedule compliance, fewer contractor claims, harmony among contractors, etc.) The Project believes that a high payback provision late in the contract would unnecessarily punish the contractor. This Office contends that strong disincentives differ from punishment and the Project can craft program provisions to highlight the difference and maintain contractor participation in the Program until the end of the contract. The Project should require higher payback percentages than the provisions currently require from contractors who withdraw towards the end of a contract.

9) **The Program would not necessarily address the types of claims that occurred on C05B1, another major tunnel finishes contract.** Project staff stated that they chose C17AA, a tunnel finishes contract, as a test case for the Program in part because of the volume of claims encountered on an earlier tunnel finish contract – C05B1. The Project developed the Program to deal with specific types of claims such as those encountered on the C05B1 contract. However, claims and changes plagued the C05B1 contract for a variety of reasons – including design problems, some of which are unlikely to reoccur on the C17AA contract. For example, the contractor had difficulty installing the ceiling system because of poor design coordination and unclear specifications.[13] The Project informed this Office in late 1998 that it revised the ceiling design for future contracts such as C17AA. In addition to the ceiling issue, the Project accelerated the C05B1 contract in order to open the

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[13] This Office released a report in December 1998 entitled *A Review of the Central Artery/Tunnel Project's Use of Anchor Bolts on the C05B1 Tunnel Finishes Contract* which, discussed a number of change order issues for the C05B1 contract.

Ted Williams Tunnel earlier than planned.[14] This acceleration accounted for approximately one third of the total contract cost increase (nearly $4 million) that the Project attributed to schedule adjustments.

The Project did not design the Program to deal with the previously described C05B1-type design problems, unclear contract language, and Project-imposed schedule accelerations. The Project should not expect the Program to deal with these issues. In fact, Project management should not expect these types of issues to occur at all on the C17AA contract. If B/PB has the contract on schedule then no schedule acceleration (unless ordered by Project management) should be necessary. And according to the Project, the tunnel ceiling design has been changed to avoid some of the C05B1 construction. If these same issues reoccur, the Project will have to deal with them separate and apart from the Program. This would point not to an ineffective incentive program, but to an institutional problem. Uncorrected design problems, contractor inefficiency, and a failure to absorb lessons-learned from earlier contracts should signal Project management that B/PB's management requires examination. No incentive fee program can make up for poor management.

10) **The Program provisions should explain how schedule extensions would impact contractor obligations and the fee payments.** According to the Program provisions, the Project can still grant schedule extensions even with the incentive schedule. But the Program provisions do not specify the impact of these extensions on the incentive schedule. It is unclear whether the Project may grant schedule extensions for delays for which the contractor is responsible under the Program; it is also unclear how the fee payments and the rating criteria would change as a result of schedule changes.

11) **The Project should clarify the language in certain Program provisions.** Specifically, Subsection 4.04.C should provide a detailed description of when Project management might choose not to enforce the payback provision. Also, both Subsections 1.03.D.2 and 1.03.D.3 of the Program provisions refer to a Subsection 1.02.D.1. Section 1.02.D.1 does not exist to the knowledge of this Office. The Project should correct this reference.

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[14] By letter to the Project of December 29, 1997, this Office reported the results of its review of the costs associated with the early opening of the Ted Williams Tunnel and the acceleration of the C05B1 and other contracts.

Thank you for the opportunity to provide technical assistance to the Project. This Office hopes that Project management finds this review useful. This assistance would likely have been more useful if the Project requested the assistance before rather than after testing the Program on the C17AA contract. If this Office can be of any further assistance or if you have any questions or concerns, please do not hesitate to contact Neil Cohen, project leader for this review, or me.

Sincerely,

Wendy Haynes,
First Assistant Inspector General for
Megaproject Oversight

Attachments

cc: William Flynn, Deputy Director
Joseph Allegro, Assistant Director
John Gorman, Counsel
Richard DiFedele, Claims and Change Manager

Massachusetts Turnpike Authority
Central Artery/Tunnel Project

RECEIVED
MAY 22 2000
BY:

May 11, 2000

Wendy Haynes
First Assistant Inspector General for Megaproject Oversight
Office of the Inspector General
State House Station
P.O. Box 270
Boston, MA 02133

Subject: Technical Assistance Review - Incentive Fee Program

Dear Ms. Haynes:

The Central Artery/Tunnel Project ("CA/T" or "Project") has received your February 7, 2000, letter summarizing the results of your office's review of the Project's first use of an Incentive Fee Program (the "Program") on Contract C17AA. The Project appreciates this technical assistance and is certain that the Program will benefit from your observations and suggestions.

As a result of your comments we are preparing a detailed Project Procedure adopting many of your suggestions on handling the incentive fee determination process. This Project Procedure will be focused on assuring adequate controls and oversight. It will require that clear measurable objective performance goals be identified, reviewed and approved by Project Management prior to the commencement of each incentive fee period. It will require review and approval of each incentive fee determination by the Deputy Project Director. It will also address other issues as listed in Attachment B to this letter. In addition, we are issuing an administrative modification to correct the typographical errors you correctly point out exist in Specification Section 721.040 attached to Modification A010 for contract C17AA.

Your first numbered recommendation suggests that the Project obtain a legislative exemption prior to proceeding with implementation of the Incentive Fee Program. CA/T Legal has reviewed the Program and concluded that it is consistent with the public bidding laws. Thus we do not believe a legislative exemption is necessary.

Attachment A to this letter contains the Project's comments on each of the like-numbered recommendations contained in your letter. As noted above, Attachment B lists items to be covered in the Project Procedure for the Incentive Fee Program.

Again we thank you for your thoughtful suggestions. Although we disagree with a small number of the conclusions you have reached, we agree with many and will incorporate those into the Incentive Fee Program.

Very truly yours,

Michael Lewis
Acting Project Director

Encls: Attachment A - CA/T Response to Numbered Recommendations
Attachment B - Items for Incentive Fee Program Project Procedure

2000-00745M AD-2.4

185 Kneeland Street • Boston • Massachusetts • 02111 • Phone 617-951-6000 • Fax 617-457-8198

RECEIVE
MAY 22 2000
BY:

Attachment A

CA/T Comments on Massachusetts Inspector General Recommendations

The following paragraphs address the like numbered conclusions of your letter:

1. You recommend that we obtain a legislative exemption.

Your first numbered recommendation suggests that the Project obtain a legislative exemption prior to proceeding with implementation of the Incentive Fee Program. CA/T Legal has reviewed the Program and concluded that, whether as a provision in a future contract or an addition to an existing contract, the Program is consistent with the public bidding laws. Thus we do not believe a legislative exemption is necessary.

2. You recommend that we perform a cost-benefit analysis

The Project recognizes the importance of conducting cost-benefit analyses of the Program. We identified C17AA, the main line tunnel finishes contract, as an appropriate contract to test the program because it involves a large number of access restraints and interfaces with other Contractors. As such, C17AA has a large potential for delay and a large potential for the Program to result in benefit to the Project. In first considering the feasibility of the Program and before implementing it, the Project performed a rough estimate of its costs and benefits. More significantly, it has always been our intent to perform a periodic cost benefit analysis of program performance on this test ("demonstration") use of this program on C17AA.

The preliminary rough estimate mentioned above is attached as Exhibit 1. That estimate is based on a review of the history of delays and interface issues on C05B1, the Ted Williams Tunnel finishes contract. The estimate presumes that only 25% of the delay for every 120-day period of performance which occurred on C05B1 (of the type which are directly waived and mitigated under the incentive fee program) will occur on C17AA. It also presumes that the liquidated damage figures in the C17AA contract are also a reasonable measure of the damages that would be incurred by the Project for excusable delays. This analysis resulted in a rough estimate of approximately $ 8.5 million in savings, representing the difference between the damages that the Project would avoid and the amount of the incentive fee, presuming the contractor earns the entire incentive fee. We believe this is a conservative estimate, since it is very likely that the avoided delays and avoided costs will exceed the minimum amount presumed in this analysis, and it is likely that the paid out incentive fee will be less than the full amount available. Nonetheless, trying to quantify possible costs and benefits requires so many presumptions and hypotheticals that we caution against any substantial reliance on this hypothetical calculation.

The best cost benefit analysis is performed on a test program such as we are implementing on C17AA. The effectiveness of this test Program will be monitored throughout its application on C17AA. The costs and benefits of the Program will be analyzed as soon as we have sufficient data. We anticipate that sufficient data will be available after the first two or three incentive fee evaluation periods for which an evaluation is performed and thereafter at least annually. It is important to note that we do not intend to make a decision to stop or go based solely on a single evaluation. These decisions will be continuing and take into account all available information.

A meaningful cost benefit analysis on C17AA will be possible because it is in the interest of the contractor to provide, under section 721.040, 1.03.B.3, informational notices, proposals and estimates for waived claims. We will be able to quantify waived claims, acceleration efforts and avoided delays and compare those avoided costs to the incentive fee actually earned. The analysis will be used to determine whether to expand the Program, which other contracts would benefit from the Program and how much to allocate to incentive fee on subsequent (existing or new) contracts added to the program.

We disagree with your speculation, under item 2 at page 6 of your letter, that the program could have the unintended result of increasing construction costs. On the contrary, the inclusion of the program in the bid documents is either neutral or results in lower overall bid prices, because of the opportunity this affords the bidders to earn incentive fee while proactively avoiding some portion of potential Contractor increased costs. Your conclusion that bid prices would increase is inconsistent with the competitive bidding process. The contractors bid to obtain the award. They know that all their competitors have the option of ignoring the incentive fee program (choosing not to participate), which under your presumptions would mean bidding lower. A bidder who believes the Program will cost money would not add to his bid price because of the option to participate in the program, but would simply choose not to participate.

3. You recommend a system of "checks and balances" similar to the project procedures established for review and approval of changes

We agree with your recommendation for a system of checks and balances and that detailed procedures for managing the Program be adopted. Appropriate internal procedures are being developed and will be implemented prior to award of any incentive fee. As a minimum safeguards similar to those applied to approval of contract modifications will be applied.

The review and fee determination process specified in contract specification 721.040, outlining the reviews, standards and meetings required in the incentive fee determination process, is in considerably greater detail, and contains more contractual checks and balances than are contractually specified relating to other contract administration procedures such as changes. The incentive fee contract provisions are designed to assure that the Project receives value for its incentive fee expenditure while maintaining flexibility in focusing the Contractor's delay and impact avoidance efforts where they are needed during contract performance.

With respect to changes, backcharges, liquidated damages, inspections, contract close out, and all other contract administration processes, the detailed internal processes and reviews are contained in Project Procedures and Project Manuals, rather than in the contract provisions. We will consider your detailed comments carefully in preparing the Project Procedure applicable to the Incentive Fee Program. Attached as Attachment B is a list of the minimum content for this Project Procedure .

4. You recommend that the Project monitor incentive fee work as it would change order work.

The Incentive Fee contract provisions clearly require the Resident Engineer to monitor the contractor's efforts in meeting the established goals and performance criteria. The contract schedule provisions, even without the Incentive Fee Program provide for constant monitoring of the Contractor's efforts in maintaining his schedule. You are incorrect in stating that the "program provisions contain no direction for the Project to monitor any contractor efforts to maintain the schedule." As noted in Attachment B, the Project Procedure will provide for increased contractor oversight and monthly reports on the Contractor's progress in meeting the specific program goals.

You suggest that the Project must monitor the costs expended by the Contractor under the program. However, the incentive fee award is based upon the benefit the Project receives and not the amount the contractor expends. Even if the contractor expends substantial sums in trying to recover from a delay, the performance criteria do not result in payment of incentive fee unless he actually recovers delay. This same principle applies to all efforts expended by the contractor and all payments of incentive fee under this program. We fully expect the Contractor to find the most cost effective means to meet the goals of the program and the performance standards in order to maximize his returns under the Program.

The value of the program arises from the fact that there are early, cooperative, and proactive steps which a contractor could take, outside of his formal contract obligations, to minimize and even avoid the effects of a delay or other adverse impact, but which , unless properly incentivized, he does not take since these events are, absent the Program, the public agency's cost to bear under standard public contracting law.

5. You recommend use of more objective criteria to evaluate contractor performance

We agree with the need to establish detailed quantifiable objective criteria for determination of the incentive fee, but disagree with your recommendation that they be included in the bid documents in lieu of the subjective performance criteria in the current version of the contract specification. Quantifiable objective criteria (consistent with the more subjective performance criteria in the Program contract clause) must be established immediately prior to the beginning of each incentive period, rather than prior to bid. This is necessary to assure the flexibility required to focus the contractor's efforts on the changes, delays, access and schedule issues, and construction status that arise at the time of each incentive fee period. Without this flexibility the Program could not meet its goals. Those goals are to get the contractor to act quickly to overcome delays, restraints and changes which occur as the Work proceeds by doing more than the contract requires and doing this without filing all of the claims which the Contractor would otherwise be entitled to under the contract.

Any specific quantifiable goals at the bidding stage (other than the contract milestone dates and existing access restraints in the bid documents) could not address the actual issues and delays, since these issues and delays do not arise until actual performance. Use of subjective, but defined and workable, criteria in the contract, coupled with a process which establishes defined, quantifiable objective goals prior to commencement of each incentive fee period, meets the goals of the Program while protecting the public from misuse of public funds.

The standards for earning incentive fee must be flexible and responsive to the requirements of each individual contract as they develop. Otherwise the program can not meet its goals. However, it has always been intended that the RE and fee determination official establish specific measurable performance criteria for each incentive fee period before that period begins. This is consistent with the process outlined in the contract provision and is how the Program has proceeded thus far on C17AA. As stated above, we will include the requirement for such period-by-period objective criteria in the Project Procedure.

6. You recommend encouraging FHWA financial participation

The Project will, upon adoption of the proposed Project Procedure, ask the FHWA to reconsider its decision not to participate in the cost of the Program. In addition, we have always expected to revisit the question of FHWA participation after we have a track record of cost effective project benefits.

Your suggestion that we consult other agencies' experiences with such incentives is well-taken. We will consult such sources, including those that you listed in the Appendix. Further, as we previously explained to representatives of your office, we did, prior to preparing the original Program specification for inclusion in C17AA, review similar programs used in USDOT demonstration programs and by various state departments of transportation. We incorporated beneficial aspects of those programs into our specification, and will revisit them to see if the Program might further benefit.

7. **You recommend we remove the provisions that allow the contractor to opt out of the Program .**

The voluntary and optional nature of the incentive fee program is one of its greatest strengths. At worst, if the contractor chooses not to participate or opts out, we are no worse than we were without the Program. The contractor is more likely to participate if it knows it can opt out at any time. The Program will not work without cooperation and joint voluntary effort. The contractor will not participate if it is spending more than it would be entitled to recover in claims.

The obligation to repay a percentage of an earned fee upon opting out is based on a sliding scale designed to encourage the Contractor to remain in the Program when his participation will most benefit the Project. (Div. II, Section 721.040, 4.04.B.) In addition, the Program protects the Department if the Contractor pursues a claim after opting out by requiring full repayment of all incentive fee monies earned during claimed periods, not just a portion of that fee. (Id. at 4.04A.)

8. **You recommend use of a disincentive clause to "discourage poor performance, schedule delays and missed deadlines"**

The Program is intended primarily to address delays and impacts that are not the fault of the contractor, and that would, absent the Program, entitle it to time extensions and compensation. However, the performance criteria for the Program clearly penalize the contractor for poor performance, schedule delays and missed deadlines. The meeting of contract milestones is a major part of the performance criteria. Failure to meet the contract milestones does result in automatic reductions.

We will consider including in the Project Procedure your suggestion that the incentive fee be reduced by a certain percentage for each day by which the contractor misses a milestone or fails to submit a recovery plan. That objective standard could be made part of the objective criteria developed prior to each incentive fee evaluation period.

Significantly, the basic contract provisions include substantial disincentives to contractor poor performance. Even absent this Program, contractor-caused schedule delays are at the contractor's own cost and expense, and the contractor is required to mitigate any such delay. In such case, the contractor is not entitled to an equitable adjustment in cost or time and is therefore obligated to complete work in accordance with the existing contract milestones at the current contract price, even though it will cost the contractor more to do so. In certain situations, the Project also has available the remedies of assessing liquidated damages or even terminating the contract.

9. You conclude that the Program would not necessarily address the types of claims that occurred on C05B1

The claims, contract price adjustments and delays encountered on the C05B1, Ted Williams Tunnel finishes contract, fell into several major categories including, but not limited to, design completion issues on a fast track contract and access restraint and interface issues. The C17AA contract, as a tunnel finishes contract, is similar to the C05B1 contract in the nature of the work. The incentive fee program addresses only a subset of the delays and issues encountered on C05B1. No one has suggested to your representatives that the incentive fee program would deal with the design issues which arose on C05B1.

As previously explained to your representatives, the types of design issues that arose on C05B1 were dealt with during the design phase of the C17AA work. The C05B1 contract has been the subject of much correspondence and is not being addressed herein, other than to confirm that the Incentive Fee Program is intended to deal with a subset of the types of issues which arose on C05B1, specifically those relating to access restraints, third party delay, third party contractor interfaces, and mitigation of other types of delay.

10. The Program provisions should explain how schedule extensions impact contractor obligations and incentive fee payments

There is no provision in the contract, whether under the Program or elsewhere, for the Project to grant a schedule extension for a contractor-caused delay. Schedule extensions for excusable delays (Division I, General Requirements and Covenants, Subsection 8.10) which are not waived claims under the Program, are still possible. The contractors's incentive fee payments, in accordance with the evaluation criteria, are, among other things, contingent upon how well the contractor mitigates these delays, along with all others, and meets the original contract schedule, irrespective of entitlement to a time extension.

11. You request clarification of certain provisions.

The Project does not have the option of not enforcing the payback provision. Rather, the Forfeiture of Fee upon filing a waived claim is not automatically also an Opt Out under 4.04.B, unless either the Contractor provides notice of opt out or an opt out occurs under 1.02.A. (Para 1.02.A provides for a constructive opt out where the Contractor abandons participation in the Program.)

The reference to 1.02.D.1 in Subsection 1.03.D is a typographical error and should read, as is apparent from how it is used, 1.03.D.1. This will be corrected via administrative modification to the C17AA Contract.

Exhibit 1 to Attachment A
Preliminary Cost Benefit Analysis

Potential Program Savings

Incentive Fee Period	Duraton from End of	Potential Savings to Project Dollars per Day of Saved Delay *		Savings At Avg Rate For 30 Day Delay	Maximum Incentive Fee In Dollars	Maximum Incentive Fee Per Day
#	Prior Period	Minimum	Maximum			
1	120				$135,000	$1,125.0
2	120				$202,500	$1,687.5
3	120	$4,000	$4,000	$120,000	$567,000	$4,725.0
4	120				$580,500	$4,837.5
5	120	$7,600	$7,600	$228,000	$918,000	$7,650.0
6	120	$7,000	$47,400	$816,000	$985,500	$8,212.5
7	120	$9,700	$69,300	$1,185,000	$1,107,000	$9,225.0
8	120	$10,400	$181,200	$2,874,000	$1,512,000	$12,600.0
9	120	$11,400	$144,200	$2,334,000	$1,255,500	$10,462.5
10	120	$13,500	$92,400	$1,588,500	$1,120,500	$9,337.5
11	120	$14,100	$108,300	$1,836,000	$918,000	$7,650.0
12	120	$14,900	$48,400	$949,500	$661,500	$5,512.5
13	120	$15,400	$104,200	$1,794,000	$972,000	$8,100.0
14	120	$16,000	$80,800	$1,452,000	$540,000	$4,500.0
15	120	$20,600	$20,600	$618,000	$270,000	$2,250.0
16	120	$20,600	$124,500	$2,176,500	$675,000	$5,625.0
17	120	$20,600	$144,500	$2,476,500	$607,500	$5,062.5
18	Subst'l Completion	$14,300	$89,600	$1,558,500	$405,000	$3,375.0
19	Final Completion				$67,500	$562.5
				$22,006,500	$13,500,000	

* Note: Although Periods 1, 2 and 4 show no potential savings during this time, the Contractor will be performing engineering and procurement activities to support future milestones.

Attachment B

Items to be Covered in Incentive Fee Program Project Procedure

- Establish the responsibilities of Resident Engineer, Construction Contract Administration Manager, Director of Construction, Deputy Project Director, and other Project personnel involved in the process.

- Set out the detailed processes for operation of the program.

- Require that the Resident Engineer establish measureable objective criteria for incentive fee determination prior to the commencement of each incentive fee period. These criteria must be consistent with the evaluation performance criteria and scoring guidelines set out in the Contract Provision, however, they must also result in calculation of the incentive fee amount within a much smaller range of judgement than the Contract scoring guideline categories.

- Review and approval of those criteria by the Director of Construction. Communicate criteria to Contractor once they are approved but prior to commencement of period.

- Include, and require the use of, sample reporting formats and sample evaluation calculations. Provide copies of those samples to the contractor.

- Increase Contractor oversight, requiring that the Resident Engineer provide report of Contractor actions and evaluation of Contractor performance under the program to the Fee Determination Official after each monthly meeting (already required in specification) with the Contractor.

- Formalize the operation and role of the Incentive Fee Review Board. Require a written recommendation from this Board to the Fee Determination Official.

- Provide that the Fee Determination Official's decision on any award of incentive fee must be in writing and reviewed and approved by the Deputy Project Director, in writing.

- Provide that any change to the Program provisions permitted under the specification must be proposed by the Fee Determination Official in writing and must be reviewed and approved by the Deputy Project Director, in writing.

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SECTION TWENTY-ONE

Technical Assistance Review of the Request for Qualifications/Proposal (RFQ/P) for the Central Artery Corridor Master Plan

Assistance Requested:	November 11, 1999
Assistance Letter:	November 24, 1999 December 3, 1999
Project Responses:	**Most of the Office's suggestions were incorporated in the final RFQ/P and reflected in the evaluation process.**

Note: The Project requested that this Office provide assistance by reviewing the Project's proposed Request for Qualifications and Proposal (RFQ/P) for the Central Artery Corridor Master Plan. This Office responded to the request by letters dated November 24, 1999 and December 3, 1999. The Project incorporated most of the Office's suggestions in the final RFQ/P and the evaluation process.

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Massachusetts Turnpike Authority
Central Artery/Tunnel Project

RECEIVED
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OFFICE OF
INSPECTOR GENERAL

November 11, 1999

Wendy Haynes
First Assistant Inspector General
for Megaproject Oversight
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P.O. Box 270
State House Station
Boston, MA 02133

Re: Request for Technical Assistance

Dear Ms. Haynes:

I am writing to you under the terms of the Massachusetts Turnpike Authority's (MTA) agreement with your office to provide technical assistance to the Central Artery/Tunnel (CA/T) Project.

We are seeking your office's assistance in reviewing and providing comments on the Request for Qualifications and Proposal (RFQ/P) for the Central Artery Corridor Master Plan. I understand that you and Helen Flaster met yesterday with Mike Lewis and Marie Hayman and other CA/T staff, were briefed on the process to date and were provided copies of the most recent draft RFQ/P. We are working on an extremely tight deadline and are currently scheduled to disseminate the RFQ/P by December 1, 1999. Any comments your office can offer in anticipation of a December 1 RFQ/P dissemination date would be appreciated.

My point of contact for this matter is Brian Blethen at 235-3314. Please feel free to call him with any questions you may have. Thank you for your assistance in this matter.

Sincerely,

MASSACHUSETTS TURNPIKE AUTHORITY

WS Flynn
William S. Flynn
Deputy Project Director

Letter No. 1999-2800M

185 Kneeland Street • Boston • Massachusetts • 02111 • Phone 617-951-6000 • Fax 617-457-8198

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The Commonwealth of Massachusetts

Office of the Inspector General

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November 24, 1999

William S. Flynn, Deputy Project Director
Central Artery/Tunnel Project
185 Kneeland Street; 10th Floor
Boston, Massachusetts 02133

Michael Lewis, Assistant Project Director
Central Artery/Tunnel Project
185 Kneeland Street; 10th Floor
Boston, Massachusetts 02133

Dear Mr. Flynn and Mr. Lewis:

We are pleased to have this opportunity to provide technical assistance to you concerning the Request for Qualifications and Proposal (RFQ/P) for the Central Artery Corridor Master Plan. This is just the sort of proactive effort that was envisioned when we jointly negotiated the first interdepartmental services agreement more than five years ago. We hope our input will assist you in this instance as well as in future complex competitive selection processes.

As you noted in your letter of request, dated November 11, 1999, we met with Project staff to discuss your immediate challenges, not least of which is a December 1, 1999 target date for releasing the RFQ/P. Through that meeting and our subsequent telephone conference call with Brian Blethen, we have already communicated much of our input to your staff.

This letter memorializes what we have already orally discussed and lists items for your consideration that we may not yet have addressed in earlier conversations. Your staff has no doubt already incorporated many of our suggestions in recent drafts we have not yet seen. We have organized our comments into four categories: (I) Overall Systemic Comments; (II) Procedural and Substantive Matters; (III) Compliance with Procedures that Governed MassHighway's Management of the CA/T Project; and (IV) Other Issues. These comments are advisory only; it is not our role to approve or disapprove the process you are developing.

I. OVERALL SYSTEMIC COMMENTS

Your staff noted that the Project intends to follow the basic selection process you have used for many years for procuring final design consultant services. Our quick review of that process as described in the draft provided to us on November 10 revealed no fatal flaws, although there were acknowledged opportunities to strengthen the process by clarifying and simplifying certain elements, especially the evaluation criteria.

We discussed with your staff (and are in agreement on) the importance of a fair and open process to ensure selection of the best qualified, responsive, and responsible proposer at a reasonable price – that is, the most advantageous deal for the Commonwealth. In that context, we mulled over several options. After further discussion with colleagues here in this Office, we offer the following suggestions:

A. Your staff asked for our recommendation on the quintessential model for an RFP. We do not have such a thing for design services. However, for help in framing evaluation criteria generally, we encourage you to reference the manual for this Office's *Supplies and Services Seminar* (© 1997), Appendix A at Tab 11, entitled "Practical Guide to Drafting Effective Invitations for Bids and Requests for Proposals for Supplies and Services." We have attached a copy for your convenience.

B. Fully disclose all "rules of the game" ahead of time, preferably in the RFQ/P, but certainly well before proposals are due. Document all decisions and individual ratings and then, when you have successfully negotiated an agreement with the winner, make the record of the actual deliberations available to the public. The key point here is that the essence of openness is full disclosure of the process and all criteria that will be used in selecting the winner. The application of those criteria to any individual proposal/proposer should be treated as a confidential matter until the final decision is made. (The caveat in "C" below applies here, as well.)

C. To the extent allowed by law and consistent with past Project practice, we believe that deliberations about the various proposals should be kept confidential until the final selection is made. The MassPike Chairman has determined the appropriate mix for the Committee membership and appointed the participants. The Committee should be allowed to do its job. With respect to interviews, aside from staff specifically assigned to support the Committee, only the Committee members and the firm being interviewed should be present. To do otherwise may skew the process by giving interviewees later in the schedule an unfair advantage over those scheduled earlier. We are unaware of any laws that would prevent this approach, but a final determination would more appropriately come from your legal staff and we encourage you to consult with counsel.

D. In our view, displaying work products of the top-ranked firms *before* concluding the selection process does not enhance the quality of the final decision, nor does it promote an open and fair process.

II. PROCEDURAL AND SUBSTANTIVE MATTERS

The following comments are based on the draft provided to us on November 10, plus the revised qualification requirements and comparative criteria, which Brian Blethen faxed to us November 16. The revised criteria were a significant improvement over the earlier draft and we have been assured by staff that the RFQ/P, particularly the selection criteria and the contract boilerplate language, is still being discussed and refined.

A. *Pre-proposal Instruction Stage* – (from draft provided November 10)

1. (p. 1 of 8) Include the date, time and location of the mandatory pre-proposal meeting in the RFQ/P. In addition to sending the RFQ/P to those who responded to the solicitation of interest, provide reasonable notice to others, perhaps by advertising the mandatory pre-proposal meeting on Comm-PASS and/or widely subscribed publications.

2. (p. 2 of 8 and elsewhere) Emphasize throughout the RFQ/P and in the pre-bid conference that you DO NOT want fee proposals until they are specifically requested from the top-ranked firm(s). Adding a cautionary phrase to the form ("Proposed Budget and Schedule of Payments") may also be helpful. Relying on Project procurement staff to open the 2-part sealed submissions will also help protect the integrity of the process by ensuring that even if a proposer mistakenly encloses a fee proposal, the Committee members will not see it.

3. (p. 2 of 8) Clarify the 25-page, two-sided page limitation – presumably, the limitation applies to the combined total of the initial submission, excluding required forms and resumes. (p. 4 of 8) Where does the separate "Financial Data" envelope fall in the 25-page limit? And if this is a separate envelope, it appears that proposers actually submit three rather than two separate packages.

4. (p. 6 of 8) As we understand it, Federal Highway Administration (FHWA) dollars will not help pay for this contract, so pre- and post-award audits will not be required to verify indirect rates, among other items. The "audit data" will therefore be removed from the requirements. Instead, the Project intends to require that the top-ranked firm submit a fee proposal based on a fixed hourly rate. Presumably, the contract will include a not-to-exceed dollar amount. (NOTE: Based on information provided to us so far, it is unclear what audit requirements may pertain, which financial-related

documents the Project requires, and whether federal approval is needed for this contract.)

B. *Scope*

1. Ensure that scope requirements tie directly to the qualification and technical submittal requirements. For example (p. 6 of 8 of the 11/10/99 draft), CADD facilities are required, and should therefore be included in the Part I and Part II evaluation criteria.

2. Clarify whether the Master Planner (MP) scope includes only the parcels now identified as open space, or all 27 acres, or all open and developable space that will be available along the Project alignment. A more specific delineation of the scope is critical to refining the evaluation criteria.

3. Similarly, clarify the winner's role in the public meeting process. By so doing, you will be better able to specify evaluation criteria, particularly for the interviews. Moreover, the information will provide Project management with a basis for gauging the personnel resources necessary to support the master planning process.

C. *Selection Criteria* (from draft provided November 16)

1. Generally, we discourage elaborate numerical rating systems. While we urge you to make the selection criteria measurable wherever possible, complex numerical systems too often suggest a level of precision that can rarely be achieved in a professional services selection process. Most of us cannot make meaningful comparative distinctions beyond "highly advantageous," "advantageous," "not advantageous," and "unacceptable." It is vital, therefore, that those you have entrusted with this evaluative process – that is, the Committee – explain in writing why a particular rating was chosen.

2. (p. 2+ of 7) By setting tough and relevant pass/fail criteria, you help ensure that the Committee will only be considering proposers that meet demanding minimum quality requirements. As you further refine the Part I pass/fail criteria, pay particular attention to the descriptions of the "unacceptable" rating in Part II. For example (p. 6 of 7), should the Committee spend time considering a proposal that "does not indicate any particular methodology planned for the contract"? A more useful approach may be to list this as one of the pass/fail criteria in Part I. The Committee may also find it helpful to adopt a "checklist" of the pass/fail criteria and rely on staff to make the first cut at eliminating proposals that clearly to not meet the minimum requirements specified in the RFQ/P. The Committee's energy would best be devoted to evaluating the qualified, responsible and responsive proposals.

3. For comparative criteria, spell out what you mean/need wherever possible and convert as much as possible to pass/fail. For instance (p. 4 of 7), would the Committee seriously consider a team headed by a Project Manager who had ***not*** "satisfactorily performed services under at least 1 contract in an urban area. . ."? If not, then it would make more sense to make this a pass/fail criterion. For comparative purposes, perhaps a Project Manager with two contracts "in an urban area involving . . ." would be accorded an "advantageous" rating, and three contracts a "highly advantageous" rating. In any case, the Committee member's written explanation for the rating is critical to a fair and open procurement.

4. Because time is of the essence, consider including a requirement that the proposed team members have successfully completed similar work on time and within budget. To make such a judgment will require that the RFQ/P spell out what constitutes "similar work."

III. COMPLIANCE WITH PROCEDURES THAT HAVE GOVERNED MASSHIGHWAY'S MANAGEMENT OF THE CA/T PROJECT

The Central Artery/Ted Williams Tunnel Project Management Agreement, dated July 1, 1997, provides that MassPike will manage the CA/T Project under the same terms and conditions as it was managed under MassHighway. Specifically, see paragraphs (d)-(f) of §3 the Agreement (attached). MassHighway would be required to procure the master planning services in accordance with 801 CMR 21.00, the *Commonwealth of Massachusetts Procurement Policies and Procedures Handbook* (July 1998, as amended), and applicable laws. Compliance with 801 CMR 21.00 is not required for non-executive departments such as MassPike.

We are told that Project legal staff is now working on the standard terms and conditions of the contract. In the process of reworking the language, we encourage you to ensure that the RFQ/P meets the Agreement's requirements in terms of compliance with 801 CMR 21.00.[1] The Project should consider the Commonwealth's Standard Contract Form and Standard Terms and Conditions in drafting the RFQ/P. For example, the Standard Terms and Conditions require the contractor to maintain records for seven years, which differs from the six years that the November 10 version of the RFQ/P requires.

The Project should also consider the required and optional RFR specifications and attachments under 801 CMR 21.00 (see pages 87 and 88, and 230 - 233 of *Commonwealth of Massachusetts Procurement Policies and Procedures Handbook*).[2]

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[1] Under 801 CMR 21.00, the solicitation is referred to as a Request for Responses (RFR).

[2] Since our review was limited to an early draft and one revision, some of our comments may no longer be applicable.

Examples of required specifications include public records, bidder communication, and an Affirmative Market Program for procurements over $50,000. Required attachments include W-9 (Massachusetts W-9 Format) and an Affirmative Action Plan for procurements over $50,000.

By managing the Project under the same terms and conditions as MassHighway, MassPike complies with the Agreement and promotes a smooth transition of ownership. Moreover, FHWA and others who have agreed to the shift of ownership will be reassured that MassPike has not made a wholesale change in the way the CA/T Project is run.

IV. OTHER ISSUES

A. As promised, we will contact the State Ethics Commission staff to see if they have any relevant written guidance to non-agency selection committee members concerning conflict of interest issues.

B. We do not object to the Committee interviewing the finalists – in fact, interviews will be an important element of the selection process because as currently written, the scope of services requires that the winner appear in public meetings to present various plans. You would be well-advised to require that the top-ranked firms have the proposed team – NOT marketing staff or account managers – handle the interview so that the Committee can compare and rate the presentation skills of those who would actually be assigned to appear in public meetings.

C. We urge you to develop evaluation criteria for the interview process, as well, and ensure that those criteria are announced to prospective proposers well before the proposal due date. You may want to modify the language at page 7 of 8 to read something like this: "*The Committee intends to invite* at least the top three (3) prospective consultant teams found to be ~~fully~~ qualified, responsible and responsive ~~will be invited~~ to make an oral presentation ~~of its RFQ/P~~ to the Evaluation Committee. *If fewer than three (3) prospective consultant teams are found to be qualified, responsible and responsive, MassPike in consultation with the Committee reserves the right to arrange interviews with fewer than three teams, or to reject all proposals as deemed appropriate.*[3]

D. With respect to the form for "Certification of Tax Compliance," the law has been amended to now include reporting of employees and contractors, and withholding or remitting of child support. The form should be modified accordingly.

E. As we become aware of additional materials that may be useful to you, we will, of course, provide them to your staff.

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[3] We suggest that you also modify similar language in section 4.0 of the Information for Proposers.

Project staff members have no doubt already addressed many of these matters, with further improvements yet to come. Please call if you have questions or require clarification of any of our comments. We look forward to reviewing the next draft and providing additional oral and written comment, if you would find such an effort helpful.

Sincerely,

Wendy Haynes, First Assistant I.G.
for Megaproject Oversight

Enclosures

cc: Helen Flaster, OIG
Marie Hayman, CA/T
Brian Blethen, CA/T

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December 3, 1999

Michael Lewis, Deputy Project Director
Central Artery/Tunnel Project
185 Kneeland Street; 10th Floor
Boston, Massachusetts 02111

Dear Mr. Lewis:

We are pleased to have this continuing opportunity to provide technical assistance to you concerning the Request for Qualifications and Proposal (RFQ/P) for the Central Artery Corridor Master Plan. In this letter, our objective is to provide input with a particular focus on issues of importance to the selection evaluation committee (the Committee) recently appointed by Chairman Kerasiotes.

You and your staff continue to respond thoughtfully to our input and clearly appreciate the importance and complexity of the issues at hand. We are confident that our comments will be given full consideration in your deliberations with the Committee.

We have organized this letter into three categories: overall systemic comments; scope and evaluation criteria; and other issues. In our view, incorporating the themes discussed in this letter into the RFQ/P evaluation process will promote the Committee's efforts to create a fair and open selection process. Articulating the rules ahead of time – and diligently following those rules – will also help reduce the Committee's vulnerability to accusations of favoritism or undue influence by factors unrelated to selecting the best firm(s) to do the work.

Overall Systemic Comments

We discussed with your staff (and are in agreement on) the importance of a fair and open process to ensure selection of the best qualified, responsive, and responsible proposer at a reasonable price – that is, the most advantageous deal for the Commonwealth. In that context, we offer the following suggestions and observations:

- ➢ Full disclosure of all the "rules of the game" ahead of time is essential to an open and fair process. All evaluation criteria that will be used to select the winning proposal should be included in the RFQ/P, preferably when it is first advertised, but certainly well before proposals are due.

- ➢ A description of the selection process, including the evaluation criteria, must be available to all potential proposers ahead of time, but the application of the evaluation criteria to any individual proposal/proposer should be treated as a confidential matter. To the extent allowed by law and consistent with past Project practice, we believe that deliberations about the various proposals should be kept confidential until the final selection is made.

- ➢ Having openly announced all "rules of the game" ahead of time – that is, well before the proposal due date -- the Committee should then be allowed to do its job without distractions or interference, whether that be in the form of the benign presence of an observer or the efforts of special interest groups to influence the outcome.

- ➢ With respect to interviews, aside from staff specifically assigned to support the Committee, only the Committee members and the firm being interviewed should be present. To do otherwise may skew the process by giving interviewees later in the schedule an unfair advantage over those scheduled earlier. We are unaware of any laws that would prevent this approach, but a final determination would more appropriately come from your legal staff and we encourage you to consult with counsel.

- ➢ The Committee, with support from staff, should document all decisions and individual ratings. It is vital that each Committee member provide a written explanation for each of his or her individual ratings. The explanation need not be elaborate, but it should show how the proposer's qualifications and/or technical proposal influenced the evaluator's judgment. When you have successfully negotiated an agreement with the winner, make the record of the actual deliberations available to the public.

- ➢ In our view, displaying work products of the top-ranked firms *before* concluding the selection process does not enhance the quality of the final decision, nor does it promote an open and fair process.

Scope and Evaluation Criteria

The following comments are based on the draft RFQ/P provided to us on November 10, plus the revised qualification requirements and comparative criteria, which staff faxed to us on November 16. The revised criteria were a significant improvement over the earlier draft and we have been assured by staff that the RFQ/P, particularly the selection criteria and the contract boilerplate language, is still being discussed and refined.

SCOPE

Clarify the scope of services for the Master Planner (MP). The current RFQ/P states that the "viaduct will create 27 acres of surface area (75% of which will be open space) . . .", ' but is somewhat ambiguous about the parameters of the MP's work with respect to those 27 acres, open space within the 27 acres, and the relationship of the open space to developable parcels within the 27 acres and open space outside the 27 acres. Recent public discussions underscore the importance of clearly defining precisely what this MP will do. Moreover, a specific delineation of the scope is critical to refining the evaluation criteria.

Similarly, clarify the winner's role in the public meeting process. By so doing, you will be better able to specify evaluation criteria, particularly for the interviews. Moreover, the information will provide Project management with a basis for gauging the personnel resources necessary to support the master planning process.

Ensure that scope requirements tie directly to the qualification and technical submittal requirements. For example (p. 6 of 8 of the 11/10/99 draft), CADD facilities are required, and should therefore be included in the Part I and Part II evaluation criteria. A clear scope of services provides a sound basis for determining the qualification requirements.

Request only what you need to know and determine in advance what you plan to do with it. It is not uncommon for an agency to request information (e.g., financial audits) without having the staff expertise to evaluate the material it receives. We have also observed agencies requesting work products from proposers without a plan for how the material once received would be evaluated. The consequences include a volume of material the Committee could not possibly deal with efficiently and unnecessary expense to the proposers. Burdensome and costly proposal requirements can inadvertently discourage qualified small-to-mid sized firms with narrow profit margins from responding to the RFP/Q.

SELECTION CRITERIA (from draft provided November 16)

Generally, we discourage elaborate numerical rating systems. While we urge you to make the selection criteria measurable wherever possible, complex numerical systems too often suggest a level of precision that can rarely be achieved in a professional services selection process. Most of us cannot make meaningful comparative distinctions beyond "highly advantageous," "advantageous," "not advantageous," and "unacceptable." It is vital, therefore, that those you have entrusted with this evaluative process – that is, the Committee – explain in writing why a particular rating was chosen.

Establish tough and relevant pass/fail criteria. By so doing, you help ensure that the Committee will only be considering proposers that meet demanding minimum quality requirements. As you further refine the Part I pass/fail criteria, pay particular attention to the descriptions of the "unacceptable" rating in Part II. For example (p. 6 of 7), should the Committee spend time considering a proposal that "does not indicate any particular methodology planned for the contract"? A more useful approach may be to list this as one of the pass/fail criteria in Part I.

The Committee may also find it helpful to adopt a "checklist" of the pass/fail criteria and rely on staff to make the first cut at eliminating proposals that clearly do not meet the minimum requirements specified in the RFQ/P. The checklist could also include practical items related to submittal requirements, such as forms, signatures, page limits, etc. The Committee's energy would best be devoted to evaluating the qualified, responsible and responsive proposals.

Spell out what you mean/need wherever possible and convert as much as possible to pass/fail. For instance (p. 4 of 7), would the Committee seriously consider a team headed by a Project Manager who had ***not*** "satisfactorily performed services under at least 1 contract in an urban area. . ."? If not, then it would make more sense to make this a pass/fail criterion.

Ensure that each Committee member explains in writing why a particular rating was awarded. For comparative criteria, for instance, perhaps a Project Manager with two contracts "in an urban area involving . . ." would be accorded an "advantageous" rating, and three contracts a "highly advantageous" rating. In any case, the Committee member's written explanation for the rating is critical to a fair and open procurement.

Consider including a requirement that the proposed team members have successfully completed similar work on time and within budget. As we understand it, time is of the essence. This and other pivotal factors should be reflected in both the pass/fail and comparative evaluation criteria. To evaluate whether proposers have the necessary experience will require that the RFQ/P spell out what constitutes "similar work."

Other Issues

- As promised, we will contact the State Ethics Commission staff to see if they have any relevant written guidance to non-agency selection committee members concerning conflict of interest issues.

- We do not object to the Committee interviewing the finalists – in fact, interviews will be an important element of the selection process because as currently written, the scope of services requires that the winner appear in public meetings to present various plans. You would be well-advised to require that the top-ranked firms have the proposed team – NOT marketing staff or account managers – handle the interview so that the Committee can compare and rate the presentation skills of those who would actually be assigned to appear in public meetings.

- We urge you to develop evaluation criteria for the interview process, as well, and ensure that those criteria are announced to prospective proposers well before the proposal due date. You may also want to modify the language at page 7 of 8 to read something like this: "*The Committee intends to invite* at least the top three (3) prospective consultant teams found to be ~~fully~~ qualified, responsible and responsive ~~will be invited~~ to make an oral presentation ~~of its RFQ/P~~ to the Evaluation Committee. *If fewer than three (3) prospective consultant teams are found to be qualified, responsible and responsive, MassPike in consultation with the Committee reserves the right to arrange interviews with fewer than three teams, or to reject all proposals as deemed appropriate.*"

As we become aware of additional materials that may be useful to you, we will, of course, provide them to your staff. Please call if you have questions or require clarification of any of our comments. We look forward to reviewing the next draft and providing additional oral and written comment, if you would find such an effort helpful.

Sincerely,

Wendy Haynes, First Assistant I.G.
for Megaproject Oversight

cc: Helen Flaster, OIG
Marie Hayman, CA/T
Brian Blethen, CA/T

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SECTION TWENTY-TWO

Technical Assistance Review of a Consultant's Report Concerning Contractor Compliance with Prevailing Wage Law

Assistance Requested:	**July 1998 (oral)**
Assistance Letter:	**July 19, 2000**
Project Responses:	**November 2, 2000**

Note: The Project requested orally in July 1998 that this Office provide assistance by reviewing a report prepared by a consultant to the Project. The consultant attempted to verify whether a contractor – MassGravel Inc. – was complying with prevailing wage laws. This Office responded to the request by letter, dated July 19, 2000. The Project responded by letter, dated November 2, 2000.

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July 19, 2000

Michael Lewis, Acting Project Director
Central Artery/Tunnel Project
185 Kneeland Street; 10th Floor
Boston, Massachusetts 02111

Dear Mr. Lewis:

In July 1998, the Central Artery/Tunnel (CA/T) Project requested technical assistance from this Office concerning a report completed by Pannell Kerr Foster, P.C. (PKF), an accounting firm under contract with the Massachusetts Highway Department (MassHighway).[1] The purpose of this letter is to respond to that request as it was described by Project staff, and to identify issues that were outside of the scope of the request for technical assistance, but which require management's attention.

PKF's report to the Project consisted of a review to determine whether Mass Gravel, Inc., a trucking firm doing business with Project construction contractors, had complied with state prevailing wage regulations.[2] The Project requested that this Office review the report and comment on whether PKF had adequately addressed Project concerns. The Project also requested that this Office make recommendations concerning what additional work, if any, the Project should undertake to ensure that Mass Gravel had complied with the prevailing wage law.

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[1] The Project used PKF because the firm was already under contract with MassHighway and available to perform the review at that point in time. The Project usually enters into its own contracts with private firms for reviews or audits of this nature. According to Project staff, hiring PKF was the most expedient course.

[2] The prevailing wage law, M.G.L. c.149, §§ 26 and 27, requires contractors performing work for public construction projects to pay prevailing wages. The prevailing wage law establishes minimum wages that are paid to employees engaged in public construction projects. Before soliciting bids for any public construction project, an awarding authority must obtain a prevailing wage rate sheet from the Commonwealth. During the construction project, it is the awarding authority's responsibility to monitor contractor compliance with the prevailing wage law. Weekly payroll records must be collected from all contractors and kept on file.

Although the report was originally scheduled for completion in July 1998, PKF did not deliver the report to the Project until May 1999. This Office received a copy of the report on June 24, 1999,[3] 11 months after the Project's original technical assistance request. In the period between the Project's request for assistance and delivery of the report, this Office had initiated work on other reviews that were deemed of higher priority (e.g., the Incentive Fee Program). As other priorities permitted, staff from this Office reviewed the PKF report and interviewed key Project and consultant staff.

The written engagement agreement between MassHighway and PKF called for PKF to provide consulting services relative to Mass Gravel's compliance with the prevailing wage law for truck drivers employed by Mass Gravel. According to Project and PKF staff interviewed by this Office, the Project requested that PKF perform the review because of Project concerns about prevailing wage compliance and allegations that had been made against Mass Gravel.[4]

PKF accepted the engagement as a consultant and not as an auditor. Project staff stated that the Project did not want a complete audit of Mass Gravel, just assurance that Mass Gravel had complied with prevailing wage regulations. Project staff also stated that the Project thought that a "certified audit" would cost more than the Project was willing to spend and was unnecessary for what the Project wanted to find out. According to PKF staff, the Project and PKF agreed to a review instead of an audit because the Project suggested a scope that did not meet the criteria for an audit engagement. PKF staff stated, during an interview with staff from this Office, that the Project simply wanted to address the allegations made against Mass Gravel; using a private firm would give the review more "legitimacy."

The Office concluded that PKF adequately addressed the concerns Project staff identified in the scope of work for the review. In other words, the Project appears to have received what it paid for.[5] However, this Office believes that other issues ought to be addressed. This Office makes the following recommendations based on a review of the PKF report, review of written procedures, discussions with PKF and Project staff, and knowledge of Project systems gleaned from past reviews.

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[3] This Office notes that the report received in June 1999 was undated. According to PKF staff, the Project requested that the report remain undated. This Office is concerned by this practice, as it has been on other occasions when the Project has provided undated documents. Failure to date work products can compromise the historical record of the Project and confound efforts to hold staff and consultants accountable for their work.

[4] According to those interviewed, others in the trucking industry alleged that Mass Gravel was failing to pay prevailing wages to truck drivers it employed. This Office does not know whether the allegations included questions about Mass Gravel's subcontractors failing to pay prevailing wages to employees.

[5] PKF was paid $30,000 for completing this report.

Recommendations

1) The Project should conduct a follow up review of independent truckers classified as either "employer" or "employee-driver" because of the problems encountered by PKF with these groups. PKF encountered difficulty in contacting and receiving responses from trucking subcontractors performing hauling services for Mass Gravel to determine whether Mass Gravel had paid them the prevailing wage rate. For these payroll categories, classified as "employers" or "employee-drivers," PKF only received a 25 percent response rate,[6] and according to PKF staff, some of the responses were not complete. These payroll categories cover sole-proprietorship/single truck firms that, according to Project staff, are difficult to reach and do not always maintain adequate records.

   As you know, contractors subject to the prevailing wage law are required by law to submit certified payroll records to awarding authorities on a weekly basis. PKF staff noted, in an interview with this Office, that trucking subcontractors (i.e., sole-proprietorship/single truck firms) under contract to larger firms provide the most likely opportunities for non-compliance with the record-keeping requirements of the prevailing wage regulations. Therefore, this Office suggests that the Project:

   a. Examine this issue again by reviewing a larger statistically significant sample of independent truckers (not just those working for Mass Gravel) to ensure compliance with the prevailing wage law. According to PKF staff, attempting to confirm Mass Gravel's payment records with information from independent truckers delayed the completion of the report by months. The Project eventually accepted the PKF report, without total responsiveness from the independent truckers. The Project might have referred this matter to the Office of the Attorney General based on the lack of responsiveness alone.

   b. Conduct periodic reviews of trucking firms working on the Project in order to ensure compliance with the prevailing wage law. Project staff stated that other reviews had been conducted in the past, but concerns remain. During these reviews, the Project, or its consultant, must rely almost entirely on the firm under review having maintained and provided adequate payroll records that the Project can test and verify. If the Project has concerns about the adequacy of a firm's record keeping, the Project might consider conducting a financial audit of the firm's payroll system. Remedies for noncompliance with record-keeping requirements ultimately include debarment from public contracting.[7] In fact, failure to submit true and accurate payroll records when required is a violation of state law.

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[6] PKF randomly selected 12 subcontractors out of a total of 26. Of the 12, four were classified as "employer/employee-driver with employees." Only one of the four selected subcontractors in this category responded to PKF despite an extended effort by PKF.

c. Send periodic reminders to contractors and trucking firms about their responsibilities concerning prevailing wage compliance. These reminders might also include a basic summary of the findings from any compliance review. This could be a type of "lessons-learned program" for the contractors and trucking firms.

2) The Project should review its procedures to ensure that an adequate system is in place for monitoring prevailing wage compliance and detecting non-compliance. In July 1998, with the release of Construction Management Directive No. 41, the Project officially established and outlined the activities of the Central Compliance Office (CCO) for the administration of prevailing wage compliance activity. According to the Directive, the CCO staff works with construction contractors to discuss compliance issues, verify that all payroll reports have been received and reviewed for compliance, conduct and document monthly compliance spot checks, and investigate apparent contractor non-compliance issues. CCO staff also prepares written reports citing the deficiencies identified from the review of contractor reports and construction site interviews.

CCO staff relies upon information provided by the Resident Engineers for the various Project construction contracts. According to Project staff and knowledge acquired from previous reviews performed by this Office,[8] the Resident Engineers do not always supply information to CCO staff or comply with Project procedures, directives, or guidelines in a complete and timely manner. Construction Management Directive No. 29 outlines the responsibilities of the Resident Engineer in this area. This Office suggests that Project managers:

a. Evaluate the adequacy of the system described in the written procedures for ensuring compliance with the prevailing wage laws.

b. Review and evaluate the activity and performance of the CCO. In light of the recent departure of the CCO manager under dubious circumstances, the Project should examine the effectiveness of the CCO and the experience and ability of the CCO staff, including management. The review should also examine whether the CCO office and construction field offices have adequate resources to implement the compliance system outlined in Project procedures.

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[7] Debarment is a potential penalty after three civil infractions have been noted and cited. In those cases where a criminal prosecution is undertaken for a prevailing wage violation, an employer may be debarred for a first-time violation.

[8] Technical assistance letters from this Office to the Project Director, dated May 14, 1996 and February 4, 1998, deal with the failure of Resident Engineers and construction site offices to comply with Project procedures, directives, and guidelines, including those that call for the complete and timely collection and distribution of information.

c. Perform quality assurance/quality control (QA/QC) audits to verify that Resident Engineers follow procedures and directives pertaining to prevailing wage compliance. Project Management should hold CCO staff members accountable for program effectiveness, in part by subjecting them to QA/QC audits, from an independent source, as well.

3) **The Project should forward criminal allegations of prevailing wage violations to the Office of the Attorney General.** Due to the possible criminal nature of the allegations, when the Project has good reason to suspect a contractor has failed to comply with prevailing wage regulations, the Project should inform the Office of the Attorney General and coordinate any investigative efforts with them. The Office of the Attorney General enforces prevailing wage regulations and should be consulted when allegations are made concerning non-compliance. Since the number and scope of allegations on the Project may be large, the Project and the Office of the Attorney General may wish to develop a protocol for assessing and referring cases. At the very least, these steps will help ensure that the Office of the Attorney General is kept apprised of prevailing wage-related issues.

In the case of the Mass Gravel review, it is our understanding that the Project did not inform the Office of the Attorney General of the allegations that had been made against the firm. Instead, the Project examined the matter through the PKF review. The Project, however, did not require PKF to perform a timely examination of the allegation. In addition, because the Project's examination of the allegations took much longer than expected, the statute of limitations on any possible wrongdoing may have been exceeded. The Project did not perform a timely examination of the allegation. This is all the more reason for the Project to work cooperatively with rather than independent from the Office of the Attorney General on possible prevailing wage violations.

In cases where issues of enforcement or potential statutory violation are not so clear, we urge the Project to contact the Central Artery/Third Harbor Tunnel Oversight Coordination Commission (OCC),[9] or any of the individual member agencies as soon as allegations are made concerning potential waste, fraud and abuse of public funds. Thus advised, the Inspector General, the State Auditor and the Attorney General can determine which office has the expertise, staff resources, and jurisdiction to examine the matter.

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[9] The OCC, created pursuant to Section 2B of Chapter 205 of the Acts of 1996, is comprised of the Inspector General, the Attorney General, and the State Auditor. Each office has ongoing responsibilities with respect to the multi-billion dollar Project. The OCC was created to facilitate the activities of the three offices, through coordination and information exchange.

The Project did not in the initial request for technical assistance advise this Office of the allegations against Mass Gravel; we were simply asked to review the PKF report. Withholding or neglecting to mention such information early in a review could impede this Office's ability to conduct a review and reduce the value of the review to Project management and to the public.

The Project is responsible for determining the appropriate level of effort required to monitor and ensure prevailing wage compliance. We suggest that the Project make this determination after consulting the Office of the Attorney General and that the Project, at a minimum, maintain the monitoring efforts outlined in Project procedures. In light of past prevailing wage violations and the recent investigations into allegations of extortion, excessive overtime, and theft on the C12A3 – I-93 Massachusetts Avenue Interchange construction contract, Project management should consider an internal reassessment of how it handles its obligations under the law. As always, this Office is available to assist you in your efforts.

We consider that by this letter, we have completed our response to the Project's request for technical assistance. Please advise us if you require additional assistance in this matter. Thank you and you staff for your cooperation and assistance during this review. If you have any questions, concerns, or other requests for assistance, please do not hesitate to contact me or Neil Cohen of this Office.

Sincerely,

Wendy Haynes

Wendy Haynes
First Assistant Inspector General for
Megaproject Oversight

cc: Marie Hayman, Acting Deputy Project Director
Daniel S. Field, Assistant Attorney General

MASS PIKE

MASSACHUSETTS TURNPIKE AUTHORITY
State Transportation Building, 10 Park Plaza, Suite 4160, Boston, MA 02116
(617) 248-2800

ANDREW S. NATSIOS
Chairman

CHRISTY P. MIHOS
Board Member

JORDAN LEVY
Board Member

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BY:....

2 November 2000

Ms. Wendy Haynes
First Assistant Inspector General
Office of the Inspector General
State House Station
P.O. Box 270
Boston, MA 02133

Dear Ms. Haynes:

Reference is made to your letter of 19 July 2000, to Acting Project Director, Michael Lewis, regarding your recommendations for prevailing wage compliance at the Central Artery Tunnel Project (Project). The Project appreciates assistance from the Office of the Inspector General on this matter, and has instituted significant efforts since its inception to ensure compliance with prevailing wage laws.

Relative to your first recommendation, Project engineering and civil rights staff regularly interview workers and truckers regarding prevailing wage compliance, and information received from those interviews is verified against submitted certified payrolls. Record keeping and reporting requirements are regularly reviewed with contractors throughout the life of each contract, at preconstruction meetings, progress meetings, and through compliance reports to prime contractors.

With respect to your second recommendation, the Project continues to review its procedures to ensure its compliance mechanisms are adequate and consistent with recent guidance from the Division of Occupational Safety. The Project currently monitors prevailing wage compliance through the cooperative commitment of the MTA Civil Rights Division, resident engineers, and prime contractors. All applicable Project staff are held accountable for following our procedures and directives.

With respect to your third recommendation, the Project already refers violations to the Office of the Attorney General. In the past three years, the Project has made at least twenty five (25) referrals to the Office of the Attorney General for the possibility of prosecution. The Project will continue to work with all law enforcement agencies, including the AG's Office, the United States Attorney's Office, and the US Department of Labor.

Operator of the Turnpike, Ted Williams, Sumner and Callahan Tunnels

I trust this correspondence responds to the recommendations in your report. We again appreciate the response to our original request. Please feel free to call me at 248-2945 if you have any questions.

Sincerely,

Lorenzo G. Parra
Director of Civil Rights

cc: Michael Lewis
Joe Landolfi
Kate Almquist
Marie Hayman
Kurt Dettman
Joe Allegro
Maria DaRosa